

With the aid of the trublu® calibration device, all sensors of the pedar®-x system are individually calibrated using constant air pressure.

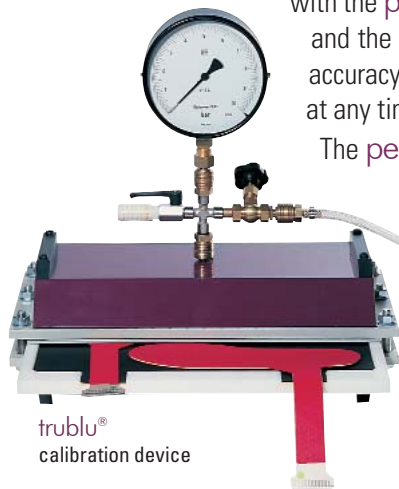
This procedure is computer-assisted and can be performed in a short time.

Calibration guarantees accurate and reproducible data. The calibration curves, one for each sensor, can be checked by the user at any time.

This method guarantees the accuracy of the absolute values measured, not only for the total force (dynamic body weight), but especially for the local load on each area of the foot.

This allows the system to determine body weight (no need to be entered by the user!) and at the same time assess local pressure, which often proves to be the cause of disturbances. Measurement is accurate and repeatable.

The trublu® calibration device can be delivered with the pedar®-x system, and the user can test the accuracy of the equipment at any time.



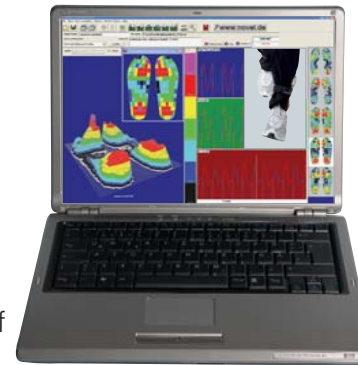
trublu®
calibration device

The pedar®-x system is delivered with calibrated measurement insoles. Calibration should be checked at least once a year.

The pedar®-x data acquisition software contains many helpful and user-friendly options for fast pressure data collection and analysis.

Features of pedar®-x software

- individual sensor configuration
- online and offline modes
- synchronous digital video recording (up to 4 cameras)
- storage of pressure data and video as one combined file
- simultaneous display of 2D and 3D
- isobar display
- dynamic and frame by frame playback of the rollover process
- maximum pressure picture
- step selection
- force-time integrals
- comparison for pre/post difference picture
- averaged and individual gait lines
- ASCII output
- long-term load monitoring
- link with novel database
- link with pedoport® software
- link with scientific novel analysis software
- synchronisation with EMG and video based gait analysis systems



pedar®-x software

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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 novelgmbh © 2008



Reliable in-shoe pressure distribution measurement system

The **pedar[®]-x** is an accurate and reliable measurement system for monitoring local loads between the foot and the shoe. The system operates with a straight connection to the PC, but also via radio signal with its built-in Bluetooth™ telemetry system.

In addition, measurement data can be stored in built-in flash memory, to be downloaded to the computer at a later stage. The

pedar[®]-x is also suitable to monitor loading through the ground reaction forces.

For this purpose **novel** created the **pedoport[®]** software, especially designed for long-term monitoring.

pedar[®]-x system

Due to its compact design and ergonomic shape, the **pedar[®]-x** system can be used for many applications.

The **pedar[®]-x** system allows to measure local loading in real life situations during daily activities, such as while walking, running, climbing stairs, carrying loads or riding a bicycle. The **pedar[®]-x** system connects to thin, elastic sensor insoles that cover the whole plantar surface of both feet, or to dorsal pads to measure the dorsal area of the foot. The **pedar[®]-x** system can be synchronized with EMG and digital video sequences for motion analysis. The measurement can be triggered and controlled from the computer, via Bluetooth™, or directly by the test person through switch control.

Applications of pedar[®]-x system

- shoe manufacturing (improved fitting and dynamic function)
- orthotic design (footwear and orthotics evaluation)
- therapy control in rehabilitation
- kinetic analysis of free gait
- long term load monitoring
- acquisition of sport biomechanics and loading data
- self-monitoring biofeedback

Technical data for pedar[®]-x

dimensions (mm)	150x100x40
weight (g)	360
number of sensors (max.)	256/1024
measurement frequency	20,000 sensors/sec
storage type	32 MB internal flash
recording time	25 min at 100 Hz to flash memory
operating system	Windows XP Service Pack 2
power supply	NiMH battery, 4,5 h
computer interface	fibre optic/USB and Bluetooth™
sync option	fibre optic/TTL, in and out/wireless
telemetry	Bluetooth™
wireless remote ctr.	FM



Technical data for pedar[®]-x insoles

shoe size	22 to 49 (European), 3 widths
thickness (mm)	1.9 (min. 1)
number of sensors (max.)	85 - 99
pressure range (kPa)	15 - 600 or 30-1200
hysteresis	<7 %
resolution (kPa)	2,5 or 5
offset temperature drift	<0.5
minimal bending radius	20 mm

The **pedar[®]-x** system operates with Bluetooth™ to transmit data wireless. The in-built Bluetooth™ allows wireless measurements with the **pedar[®]-x** system, both indoors and outdoors. The telemetry system allows free range of movement for the subject, and at the same time the user can observe the change in load and pressure on the screen, allowing him to fully control the tests from the computer. The system is also recommended for biofeedback studies. Bluetooth™ data transmission is compatible with any up-to-date computer currently on the market.