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The pedar® system - The quality in-shoe dynamic pressure measuring system

The pedar® system is an accurate and reliable pressure

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distribution measuring system for monitoring local loads between the foot and the shoe. The pedar® offers the ultimate versatility with its multiple standard features and operating modes. The pedar® can be tethered to a PC via a fiber optic/USB cable. It can also function in a mobile capacity with its built-in Bluetooth® technology. And, as yet another alternative, the pedar® has a SD card storage allowing data to be collected anywhere and later downloaded to the computer.

All of these features make the pedar® system extremely mobile and flexible to meet virtually all testing needs such as walking, running, climbing stairs, carrying loads, playing soccer, or even riding a bicycle. The results are therefore more relevant to real-life.

The pedar® system connects to highly conforming, elastic sensor insoles that cover the entire plantar surface of the foot, or to sensor pads for the dorsal, medial or lateral areas of the foot. The pedar® system allows multiple synchronisation options to use with EMG and video systems for gait analysis.

The pedar® data acquisition software
contains many helpful and user friendly options for fast pressure data collection and presentation. Different levels of pedar measuring software are available.

Features of pedar® software:

- individual sensor selection
- online and off-line modes
- pressure picture in 2D, 3D and isobar view

- numeric display
- animation of foot contact phases
- maximum pressure picture (MPP)
- step selection
- step timing analysis
- averaged and individual gait lines
- comparison and difference pictures
- calculation of regional loadings
- ASCII output
- simultaneous video recording
- audio feedback for force and pressure values
- long term body load analysis
- integrated into novel databases
- wide range of scientific analysis software

The pedar® can also be used for long-term monitoring. For that application novel has developed the pedoport software which allows long term monitoring of force or pressure over many hours and an efficient analysis for instance of overloading a certain force level. The pedar® biofeedback unit gives a real-time feedback signal if a given force or pressure threshold is exceeded.

Applications of pedar® system:

- footwear shoe research and design
- aid in orthotic design
- rehabilitation assessment
- kinetic analysis of free gait
- long term load monitoring
- sport biomechanics

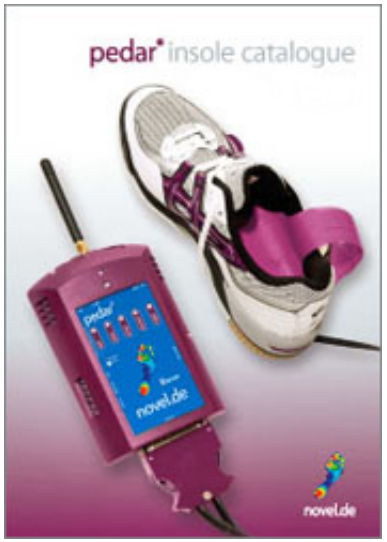
- biofeedback

Technical data for pedar®-xf system:

dimension (mm)	150 x 100 x 40
weight (g)	400
number of sensors (max)	256 (1,024)
measurement frequency	20,000 sensors/second
storage type	2 GB SD card
computer interface	fiber optic/USB and Bluetooth®
operating system	Windows 7 or 8
sync option	fiber optic/TTL, in and out/wireless
power supply	NIMh battery

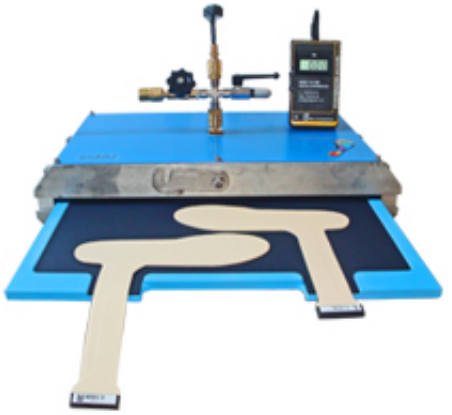
Technical data for pedar® insoles:

shoe size	22 to 49 (European), 3 widths
thickness (mm)	1.9 (min. 1)
number of sensors	85 - 99
pressure range (kPa)	15 - 600 or 30 - 1,200
hysteresis (%)	< 7
resolution (kPa)	2.5 or 5
offset temperature drift (kPa/K)	< 0.5
minimal bending radius (mm)	20



Download here the pedar insole catalogue to see the insole sizes and the schematic drawing of each sensor insole. Please notice that one insole size covers two foot sizes.

pedar®-xf analyser



trublu® calibration device

Bluetooth® telemetry

The pedar® works with Bluetooth® wireless telemetry system in a wide range. The

pedar® system includes a built-in Bluetooth® system and communicates with various Bluetooth® PC adapters. The telemetry allows the user to watch the subject and at the same time fully control the testing from a PC. The dynamic pressure data can be viewed online and the subject advised how to perform. The system is a perfect tool for teaching and for biofeedback testing.

trublu® calibration device

With the aid of the trublu calibration device, all sensors of the pedar® system are individually calibrated. Calibration guarantees accurate and reproducible data and can be checked by the user at any time.

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