The loadsol® load monitoring device accurately measures the normal plantar force detected inside the shoe during all static and dynamic activities.

This is the first system to utilize a plantar sensor integrated with compact matchbox size wireless electronics for data processing and transmission. In addition, this is the first system of this size and capability which can accurately measure the plantar force between the foot and the shoe without estimation from other variables such as body weight, acceleration, etc.

### Features of the loadsol®

- Measures the plantar force in standing and walking
- Displays bipedal force over time and gives biofeedback
- Provides audio and visual biofeedback on 2 force levels
- Runs with various apps for rehabilitation and biomechanics
- Connects to the novel software family
- Utilizes calibrated, capacitive sensors
- Covers the complete plantar surface of the foot
- Can separate forefoot, midfoot, and hindfoot
- Works with small, lightweight electronics
- Connects to smartphones via Bluetooth®

### Technical data of the loadsol® insole:

<table>
<thead>
<tr>
<th>Size</th>
<th>All sizes and custom made</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sensors</td>
<td>1, 2, or 3 full plantar area</td>
</tr>
<tr>
<td>Frequency (Hz)</td>
<td>Max. 200 Hz</td>
</tr>
<tr>
<td>Transmission</td>
<td>Bluetooth® LE</td>
</tr>
<tr>
<td>Operating device</td>
<td>iPhone, iPad, iPod, Android</td>
</tr>
<tr>
<td>Battery</td>
<td>3V coin cell / 14 hours or rechargeable cell</td>
</tr>
</tbody>
</table>

All systems from novel operate with high-quality, calibrated sensors and provide reliable and reproducible long term measurements. loadsol®, artinscience®, and the novel logo (colored foot) are the registered trademarks of novel gmbh © 1992-2017
The loadsol® insole monitors the normal force between the plantar side of the foot and the shoe.

It is now possible for the first time to accurately measure the force statically or dynamically inside a shoe during standing and walking utilizing a large sensor which covers the entire plantar surface of the foot.

The loadsol® system can be used in the patient’s own or a therapeutic shoe with a flexible band and then attached to the lacing or shoe upper. This method was chosen over embedding the electronics directly into the insole where electronic parts could disturb the sensation.

Additionally, it is possible to place the loadsol® insole in the shoe at the same time as a subject’s corrective insole without disturbing the biomechanical function of the correction insole.

Several smartphone apps will be available, each tailored to the specific application such as long-term load monitoring with biofeedback, bipedal comparison of normal ground reaction force, balance and stability of gait, and monitoring of walking and running.

The loadsol® sensor technology can also be supplied as a dorsal pad that can be put on the upper side of the foot to examine the comfort of the shoe.

The measurement rate of the loadsol® insole can be user-defined. The raw data are available so that users may program their own applications.

The loadsol® insole is based on a new patent and consists of a large linear sensor that avoids errors. For applications where the distribution of localized pressure is of interest, but rather the total load on the foot in up to three areas is of importance, the loadsol® insole is the optimal solution.

This new technology has a matchbox sized electronics and communicates wirelessly with a smartphone via Bluetooth®. The data is transmitted to the smartphone in real-time so that the subject can receive an instantaneous biofeedback via sound or vibration. The data can be stored inside the smartphone and later be transferred to a PC for multiple analysis of the data matching with the specific task.

Long-term monitoring of body load on both feet as well as instability, balance, fatigue, performance, and biofeedback are possible.

The loadsol® insoles come in any foot size and can be custom made for specific applications.

To eliminate any disturbance or influence to the proprioception of the plantar aspect of the foot, the small electronics are connected to the insole via a very thin flexible band and then attached to the lacing or shoe upper. This method was chosen over embedding the electronics directly into the insole where electronic parts could disturb the sensation.

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