


XO-SOLE

3D Force Measurement Insoles



XO-SOLE revolutionizes human performance assessment as the world's first insole capable of measuring accurate three-dimensional Ground Reaction Forces (GRF)—including shear forces—outside the laboratory. Until now, reliable GRF data collection, especially shear force measurement, required expensive force plates or instrumented treadmills confined to controlled lab environments. XO-SOLE disrupts this paradigm by embedding XO-NANO's patented Smartfoam technology into a fully integrated, calibration-free, standard-sized insole. With unparalleled portability and precision, XO-SOLE empowers researchers, clinicians, and athletes to capture detailed biomechanical insights wherever movement occurs.



**Comfort and 3D
Force Measuring
enabled by
SMARTFOAM**

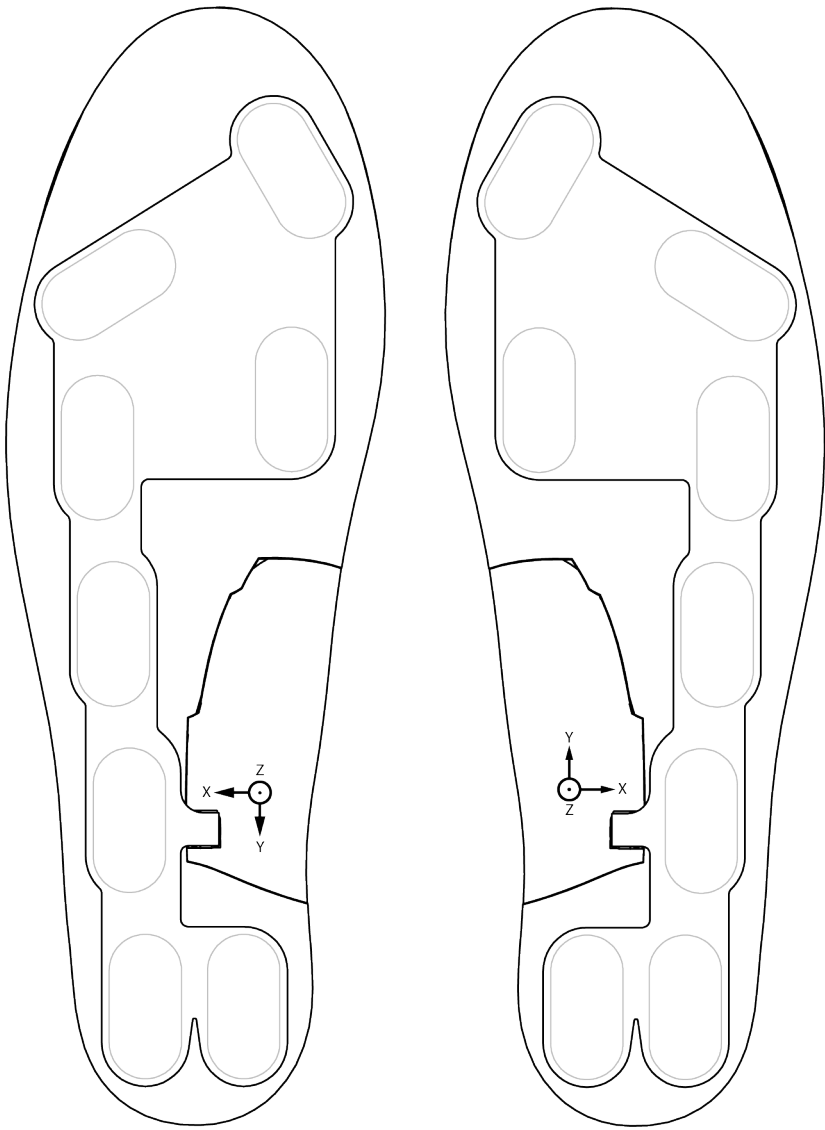


Key Benefits

- Only insole on the market that can accurately measure 3D GRF, including shear forces
- Fully integrated, standard-sized insole
- XO-NANO's patented Smartfoam technology (no calibration required)
- Up to 14 hours of onboard data storage at 250 Hz sampling rate (7 hours at 500Hz)
- Full day battery life for ease of use (20+ hours)
- Bluetooth Low Energy (BLE) connectivity for seamless data transfer and real-time data visualization.

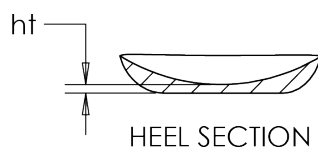
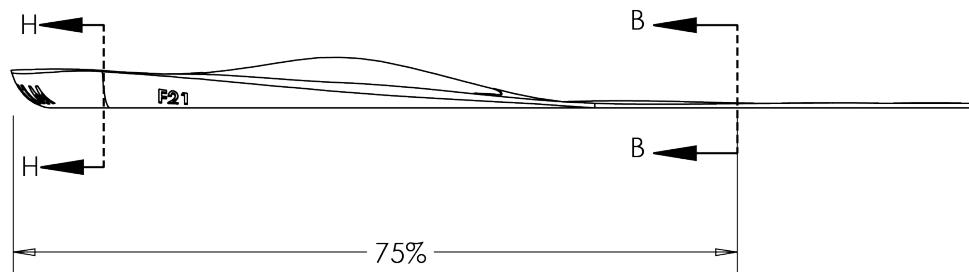
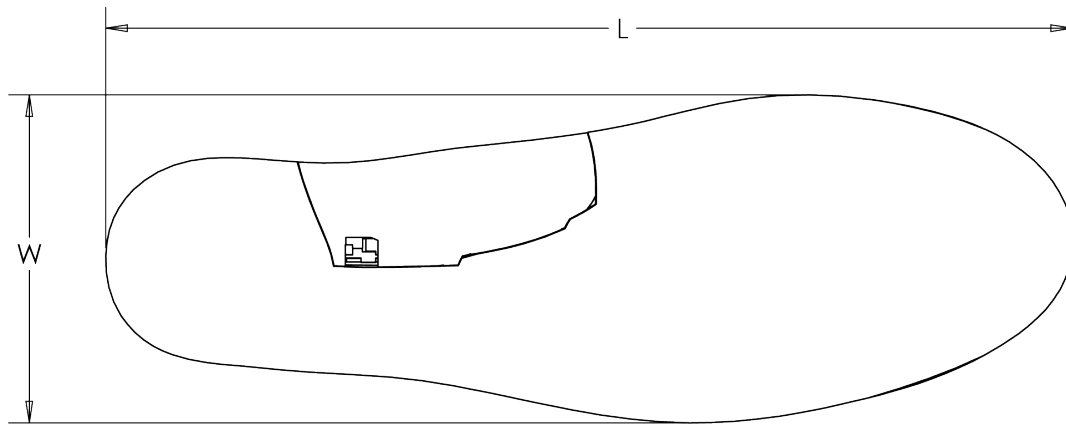
Sensor Overview

XO-SOLE Fishlake Rev4



Feature	Specification		
Smartfoam Sensors	The entire insole surface is Smartfoam with 8 dual pressure and impact measurement areas		
Additional Sensors	3-axis accelerometer	3-axis gyroscope	3-axis magnetometer
Data Storage	1GB of onboard storage	7-hours @ 500Hz	14-hours @ 250Hz
Wireless	Bluetooth Low Energy 5.4		Real-time data transmission
Power Supply	100 mAh rechargeable Lipo battery	20-hours continious use	
Insole Sizes	5 trimable double sizes ranging from men's size 4-14		

Dimensions and Weight



	X-Small	Small	Medium	Large	X-Large
Length (L)	247mm	264mm	279mm	296mm	321mm
Width (W)	84mm	90mm	95mm	100mm	109mm
Ball Thickness (bt)	5.7mm	5.1mm	4.6mm	4.4mm	4.8mm
Heel Thickness (ht)	6.6mm	6.0mm	5.6mm	5.4mm	4.8mm
Max Thickness (mt)	19.1mm	19.3mm	18.2mm	18.0mm	17.8mm
Men's Shoe Size (US)	4-6	6-7	8-9	10-11	12-14
Men's Shoe Size (EU)	36-39	39-42	42-44	44-46	47-50
Weight (g)	89	89	89	94	99

Operational Modes

Mode	Description	Use Case
Live Stream	Both XO-SOLEs simultaneously transmit the data to the XO-SOLE App for live viewing at 100 or 200 Hz. This data can be saved to the smart device.	Live demonstration for real-time feedback.
Record to XO-SOLE	All XO-SOLE data is saved to the onboard storage for future retrieval via USB to a Windows computer or Bluetooth to the App. The data can be saved at either 250 or 500 Hz.	Recording at the highest rate for the high quality data used in gait analytics.
Dual Stream Record	The system is capable of dual stream and record to XO-SOLE. The streamed data will be broadcast at 100 or 200Hz while the data can be saved to the XO-SOLE at 250 or 500 Hz.	The best of both worlds, however, battery life will be negatively impacted.

Measurement Accuracy

Force	R ² Correlation	RMSE (N)
Medial-Lateral - Sheer Forces	0.93	10.58
Anterior-Posterior - Sheer Forces	0.94	21.63
Vertical - Normal Forces	0.98	74.18

Connect With Us

P: 801-709-0659
info@xonano.com
xonano.com