Fourier Rehab Global Partnership Network

FOURIER REHAB

PelmaMotus™

Foot Plantar Pressure Assessment & Training System

PelmaMotus™

PelmaMotus™ integrates assessment and training by adopting a large area of pressure sensor array, high-speed acquisition circuit, and intelligent analysis software.

Combining with biomechanics and assessment databases, PelmaMotus™ can accurately and quickly assess the functional status of the foot, posture, and balance. It also provides targeted, immersive, and interactive gamified training.

Display

Keyboard

Handrail

Display Stand

Measuring Platform
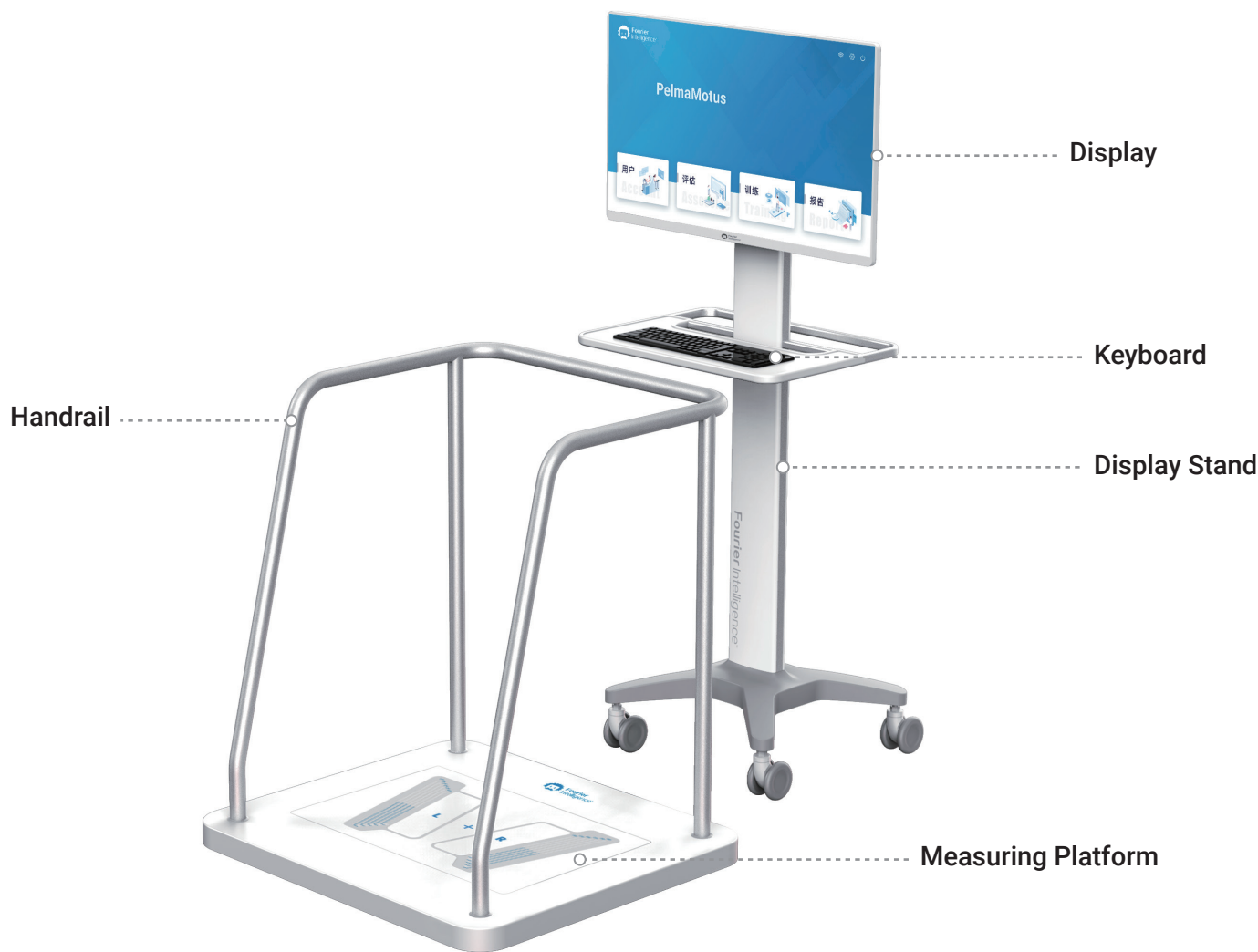
Multiple Assessments
Foot Plantar Pressure, Balance, and Posture

PelmaMotus™ integrates three assessment modules, which are balance function, foot plantar conditions, and body posture. The comprehensive and professional assessments provide references for personalised balance training. They can be used as a reference for the customisation of lower limb supporting accessories.
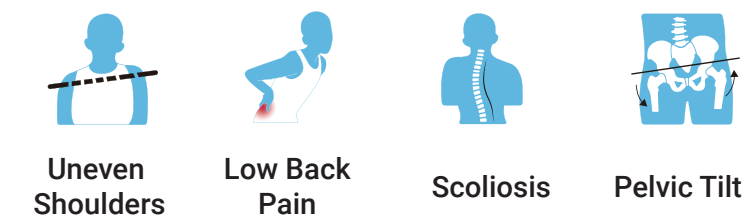
Balance

Proprioception

Vision

Vestibular System

Foot Plantar Pressure

Foot Arch Recognition

Metatarsalgia

Heel Pain

Standing Posture

Uneven Shoulders

Low Back Pain

Scoliosis

Pelvic Tilt

Comprehensive Data Acquisition
Various Scenarios and Options

3 Assessment Scenarios
Difference assessment scenarios for different stages of rehabilitation

Barefoot Accessories Shoes On

4 Assessment Options
Balance assessment with different support and visual inputs

Single Leg Both Legs Eyes Open Eyes Closed

17 COP Parameters
Balance, proprioception, vestibular system, vision, and others
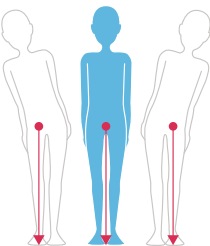
Foot Plantar Pressure Mapping
Easier Characteristic Recognition

Real-time Visualisation
Real-time pressure distribution and centre of pressure

Foot Plantar Pressure Analysis
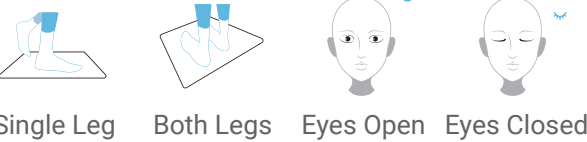Analyse foot plantar pressure in different regions based on biomechanics

16 Characteristic Recognitions
Foot plantar pressure analysis combined with database to identify foot and posture characteristic

Quantifiable Assessment
Targeted Diagnostic Recommendations

Standing balance parameters: proprioception (total trajectory length, trajectory area, trajectory over area, trajectory over time), vestibular system (X-axis COP deviation, Y-axis COP deviation), vision (Romberg), pressure mapping, support area, X-axis and Y-axis support length, etc.

Foot pressure parameters: arch index, forefoot pressure, hindfoot pressure, area, average pressure. Standing posture parameters: foot pressure, maximum foot pressure region, average pressure of feet and BMI.

Posture

Balance Function

Plantar Pressure

# Immersive & Interactive Experience
Stimulate Active Participation

Customise targeted training based on user's condition. PelmaMotus™ provides an extensive library of interactive and engaging games, which aim to motivate users to control their COP actively and train on responsiveness.

The system will provide real-time calculations based on the training parameters such as user's COP, feet symmetry and coordination, support area, etc.

Limit of Stability Body Coordination

Cognition & Perception Response & Reaction

High Precision Mechanical Sensors and High Data Accuracy

Highly precisive and dense sensors with high-speed parallel data acquisition cards that supports the data acquisition from 2,400 pressure sensors. 4 high-precision (0.1%F.S) mechanical sensors are integrated for real-time calibration to minimise sensor drifting. The output tolerance is reduced from 10% to 2%, providing more accurate data.

2400

Tolerance 10%

Tolerance 2%

4 Mechanical Sensors
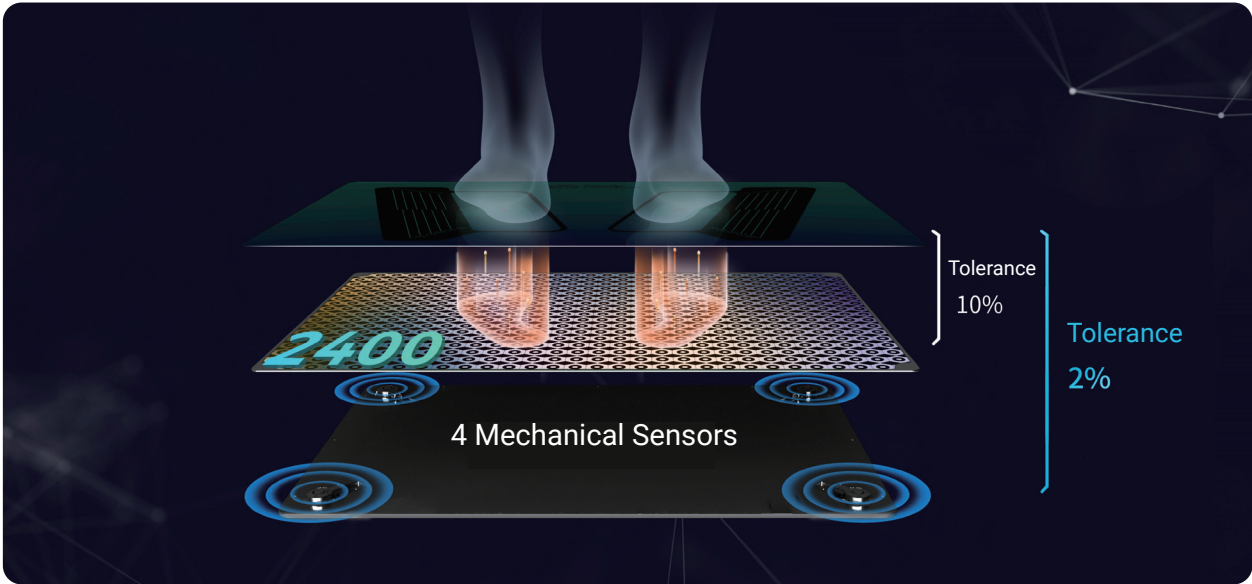
Audio Guidance
The assessment process is audio-guided and easy to operate
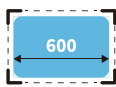
Wide Measuring Platform
600mm platform width to ensure natural standing position

Whole Surface Pressure Calibration
The whole surface is pressurised and calibrated, providing a consistent output

Data Visualisation
Data is displayed in charts and graphs to ease the interpretation and analysis

Empowering You

Fourier Rehab is a technology-driven company, infusing creativity into the development of exoskeleton and rehabilitation robotics. Together with researchers, therapists, and patients, we aim to excel in developing and redefining rehabilitation robotics solutions with interconnectable intelligent robotics technology by elevating user experience with an intuitive, easy-to-use system to empower the users and clinicians.

Fourier Global Research Joint Laboratories and Clinical Partners

RehabHub™