



ultium[®] MOTION

Portable 3D Motion Capture System

- Capture high velocity & high impact movements
- Virtual calibration adjustment & drift stabilization
- Validated biomechanical model with skeletal avatar

NORAXON[®]

Wireless IMU sensors allow for lab-quality 3D motion capture in natural environments.

The Ultium Motion System

Ultium Motion is **the most advanced inertial motion capture system available**, delivering stable, research-grade kinematic data in real-world conditions. Powered by Noraxon's MR software and the universal Ultium receiver, it supports synchronized, multi-device workflows without the constraints of a traditional lab.



Capabilities you won't find in any other IMU motion capture system:



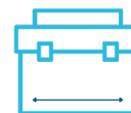
Virtual Calibration Adjustment Tool

Refine calibration after capture when a true neutral posture isn't possible.



Intelligent Drift Stabilization

Automatically minimize IMU drift and eliminate magnetic interference.



Translation Toolbox

Quantify translational movement metrics to evaluate performance and mobility outcomes.

Limitless Applications

Ultium Motion brings accurate, portable 3D motion capture to a wide range of real-world applications, from clinical rehab and sports performance to ergonomics and human factors—enabling data-driven insights across industries.



ENGINEERING & ERGONOMICS

- Product Design
- Risk Assessment
- Robotics Development
- Exoskeleton Research
- Workstation Optimization



HEALTHCARE & REHABILITATION

- Mobility & Balance
- Gait Analysis
- Range of Motion
- Biofeedback
- Return-to-Play Testing



SPORTS SCIENCE

- Performance Testing
- Running Analysis
- Injury Risk Screening
- Throw/Strike/Swing Analysis

Visualize 3D movement through the Noraxon avatar with joint angle and joint trajectory overlays, automated contact detection, and real-time range of motion feedback.

All-in-One Biomechanics Software



One Platform

All data in one place



Real-Time Sync

No delays, no drift



Plug & Play

Fast setup, zero hassle

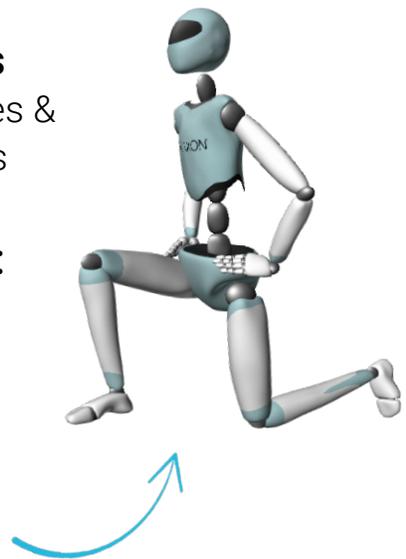


Instant Reports

Establish baselines & measure progress

In Noraxon's unified software, MR, you'll have access to:

- ✓ Anatomical joint angles
- ✓ Orientation angles
- ✓ Linear acceleration
- ✓ Joint trajectories
- ✓ Contact detection
- ✓ User-defined angles
- ✓ Quaternions
- ✓ Raw component data
- ✓ Translation data
- ✓ Skeletal & humanoid avatar



Access Finger Kinematics



MANUS™ Metagloves Pro

Integrate anatomical data from the MANUS Gloves into MR4 for enhanced visualization and analysis of finger kinematics.

- High-Precision Finger Tracking
- Simple & Efficient Calibration Procedure
- Secure Sensor Cradle

Enhance Your Analysis

Expand your analysis by pairing Ultium Motion with other devices such as:

 EMG

 FORCE

 PRESSURE

 VIDEO

 THIRD PARTY

Motion Sensor Weight:

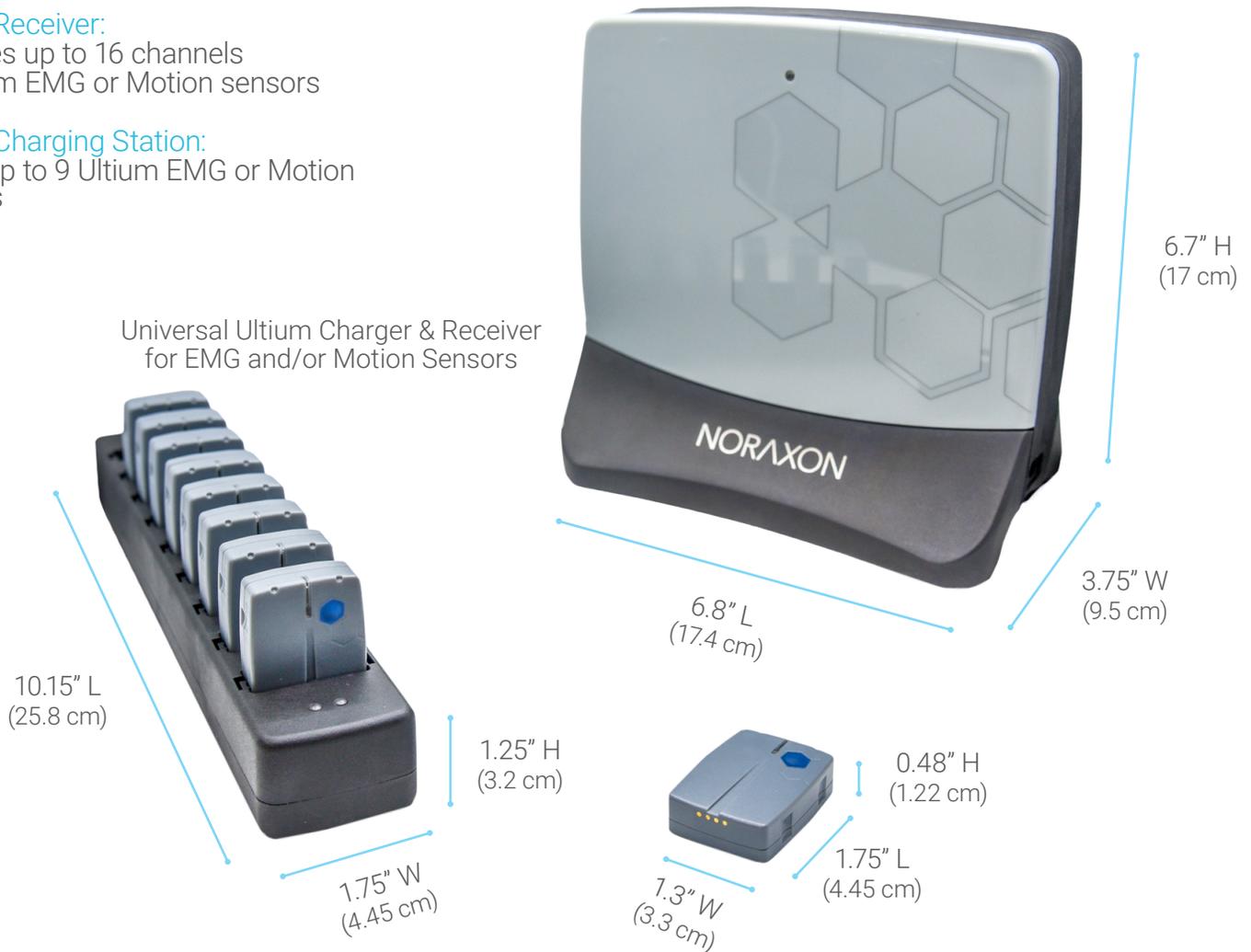
Less than 0.67oz (19g)

Ultium Receiver:

Captures up to 16 channels of Ultium EMG or Motion sensors

Ultium Charging Station:

Holds up to 9 Ultium EMG or Motion sensors



Measurement ranges:

- Acceleration: +/- 200 g
- Angular velocity: +/- 7,000 deg/s
- Magnetic field: +/- 16 Gauss

Static angular accuracy (RMS):

- 0.25 deg (pitch/roll)
- 1.25 deg (course)

Battery:

- Operational runtime: > 8 hours
- Recharge time: < 4 hours

Maximum measurement output:

- Acceleration: 400 Hz
- Angular velocity: 400 Hz
- Magnetic field: 100 Hz
- Quaternion: 100 Hz
- Orientation & joint angles: 400 Hz

Wireless transmission:

- Range: 40m (typical)
- Proprietary 2.4 GHz hopping protocol
- 250 MB on-board memory (up to 16 hours of storage)
- Latency: 50 ms (raw data)



Scan to learn more

www.noraxon.com