



ultium[®] MOTION

Portable 3D Motion Capture System

- Capture high velocity & high impact movements
- Data logging & recovery with Lossless technology
- 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 delivers accurate and reliable kinematic data for all types of movement – **including high velocity and high impact conditions** – while maintaining the advantages of the universal Ultium receiver and multi-device myoRESEARCH software platform.



Portable and Validated

The Ultium Motion system combines **advanced sensor fusion techniques** and **validated biomechanical modeling** with the convenience of **portability** to empower users with:

- Access to **research-grade motion capture** in nearly any environment without relying on a laptop or receiver
- Improved understanding of **human movement** and **performance**
- Objective **data-driven decision-making** for training and treatment protocols
- **Seamless integration** with other Noraxon products & third-party tools

Calibration Adjustment Tool



The Calibration Adjustment Tool, exclusive to Noraxon, allows users to **directly measure** and **apply subject posture** to the myoMOTION skeleton in order to **correct static calibration** and automatically **adjust bone lengths** for ISB-compliant modeling.

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

Integrated Movement Technology

Ultium Motion allows users to integrate with other recording devices to fit practical applications such as:



**Human
Factors &
Ergonomics**



**Return
to
Play**



**Throw &
Strike
Analysis**



**Performance
Testing**



**Gait
Analysis**



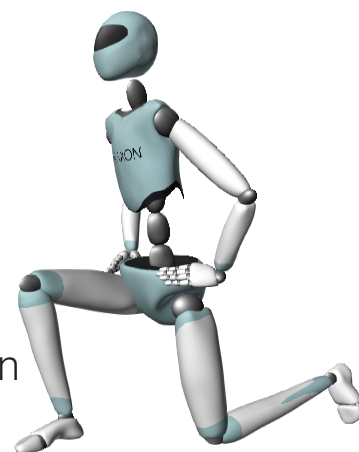
**Swing
Analysis**

All-in-One Biomechanics Software

Seamlessly collect and combine a variety of data within a unified software platform.

In myoRESEARCH, you'll have access to:

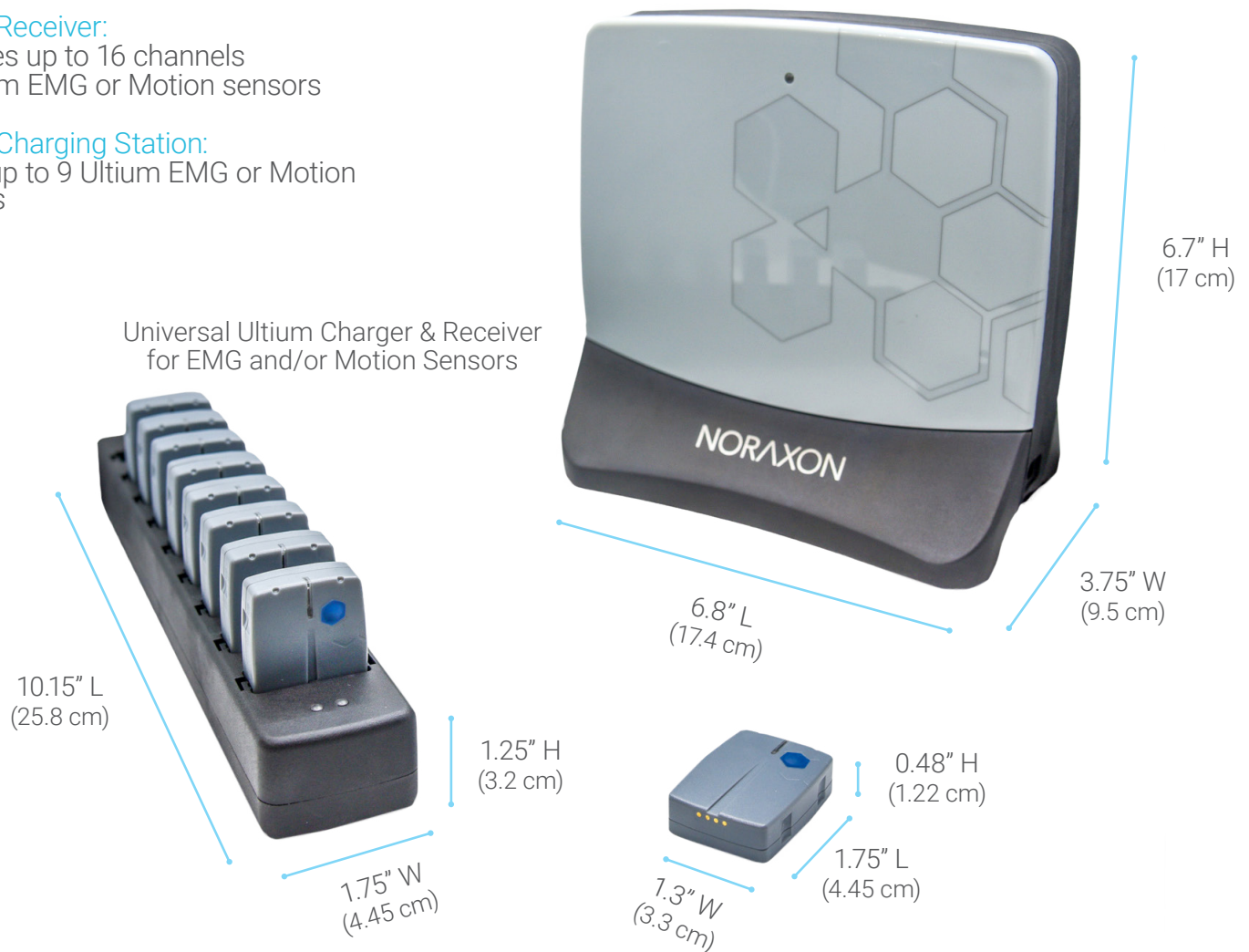
- Anatomical joint angles
- Orientation angles
- Linear acceleration
- Joint trajectories
- Contact detection
- User-defined angles
- Quaternions
- Raw component data
- Enhanced magnetic rejection
- Customizable reports



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:

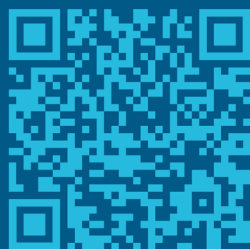
- Operational runtime: > 8 hours
- Recharge time: < 4 hours

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 onboard memory (up to 16 hours of storage)



Scan to learn more

www.noraxon.com