

Gait Analysis

Quantitative gait analysis is useful in objective documentation of walking ability as well as identifying the underlying causes for walking abnormalities in patients with cerebral palsy, stroke, head injury and other neuromuscular problems. The results of gait analysis have been shown to be useful in determining the best course of treatment in these patients.

Motion Analysis offers state-of-the-art, high resolution, accurate motion capture systems to acquire, analyze and display three dimensional motion data on patients while walking. The system is integrated with analog data acquisition systems to enable simultaneous acquisition of force plate and electromyographic data. Clinicians use OrthoTrak, our clinically validated software analysis package, to analyze and display kinematic, kinetic and electromyographic data in forms that are easy to interpret.

Typical System Configuration

GAIT ANALYSIS SYSTEM

- **8-12 Eagle or Hawk cameras**
- **Cortex**
- **Skeleton Builder**
- **KinTools RT**
- **OrthoTrak**
- **Motion Composer**
- **SIMM**

Choosing the correct camera and number of cameras for your motion capture system is dependent on various factors including:

- Size of capture area
- Size of physical room
- Complexity of movement
- Speed of movement
- Current and future needs

Your Motion Analysis account representative will work with you to determine the best system configuration. Our systems integrate fully with EMG and forceplate data, as well as many other hardwares. Customers have full access to an SDK in order to develop their own software interfaces.

Recommended Cameras

Eagle Digital Camera

- Resolution of 1.3 million pixels
- 1-500 Hz selectable frame rates
- Up to 2,000 frames per second at reduced resolution
- High quality 35mm lenses for low optical distortion
- Built-in zoom provides more visual options
- 237 LED's for brighter and better light uniformity
- Four body mount points for variable positioning
- Software controlled electronic shutter
- Software controlled adjustable light output
- Separate zoom, iris and focus settings independent of ringlight

Hawk Digital Camera

- Resolution of .3 million pixels
- 1- 200 Hz selectable frame rates
- C-Mount or Zoom lenses available
- 237 LED's for brighter and better light uniformity
- Four body mount points for variable positioning
- Software controlled electronic shutter
- Software controlled adjustable lightoutput
- Separate zoom, iris and focus settings independent of ringlight

Recommended Software

Cortex - our core motion capture software comprises tracking, editing, scripting and modeling functions in a *single integrated package*.

Skeleton Builder - creates skeletons that are relatively simple, direct and fast calculations of segments (bones) that are defined and calculated from one marker center to another.

KinTools RT - a full-body, three-dimensional kinetics and kinematics analysis package .

OrthoTrak - a fully automated, three-dimensional, clinical gait measurement, evaluation and database management system.

Motion Composer - tools for collating, integrating and presenting interactive motion capture data.

SIMM - create computer models of musculoskeletal structures.