

Optotrak Certus[®]

Track kinetic and kinematic motion with the 3D measurement system trusted by researchers for its exceptional temporal accuracy and spatial resolution – the Optotrak Certus[®] from NDI.



The Gold Standard in 3D Measurement Accuracy

Capture 3D measurements and track 6DOF (six degrees of freedom) motion in real time with the Optotrak Certus[®] optical tracking system. The Optotrak[®] uses active optical technology to measure the position and orientation of hundreds of markers within a large pre-calibrated 20m³ measurement volume. Each marker is automatically and individually tracked to an accuracy of 0.1mm and resolution of 0.01mm, independent of sampling rate, with minimal latency and noise.

Unlike other motion capture systems, the Optotrak does not average or oversample data to increase measurement accuracy. Measurements are recorded as 3D data points, not 2D images in which marker coordinates must be processed using a black-box algorithm that risks introducing errors or unwanted biases. With the Optotrak your research data is accurate and reliable – every time. You have full access to raw measurement data, and complete control over how that data is manipulated, analyzed, and presented.

High Quality Data

Capture 3D measurements to an accuracy of 0.1mm and resolution of 0.01mm with minimal latency and noise.

Data is reliable and reproducible, allowing for accurate reconstruction of the measurement signal.

6DOF Dynamic Tracking

Track dynamic motion through all six degrees of freedom (6DOF) with marker rigid bodies. Lightweight markers do not interfere with the subject's natural movement, or execution of the experiment.

No Marker Sorting

Eliminate the time, cost, and errors associated with marker sorting. The Optotrak automatically identifies and tracks each marker – there are no misidentified or unidentified markers.

Motion Capture Software

The Optotrak[®] system comes with **NDI First Principles™** software for collecting, managing, and presenting 3D and 6DOF measurement data in real time, or through post-hoc analysis. The system also includes the **NDI 6D Architect™** software for developing 6DOF rigid bodies and digitizing body segments and objects. Marker data, rigid body data, and data integrated from third-party hardware/software are displayed in an intuitive, easy-to-use graphical and text interface.

System Expandability

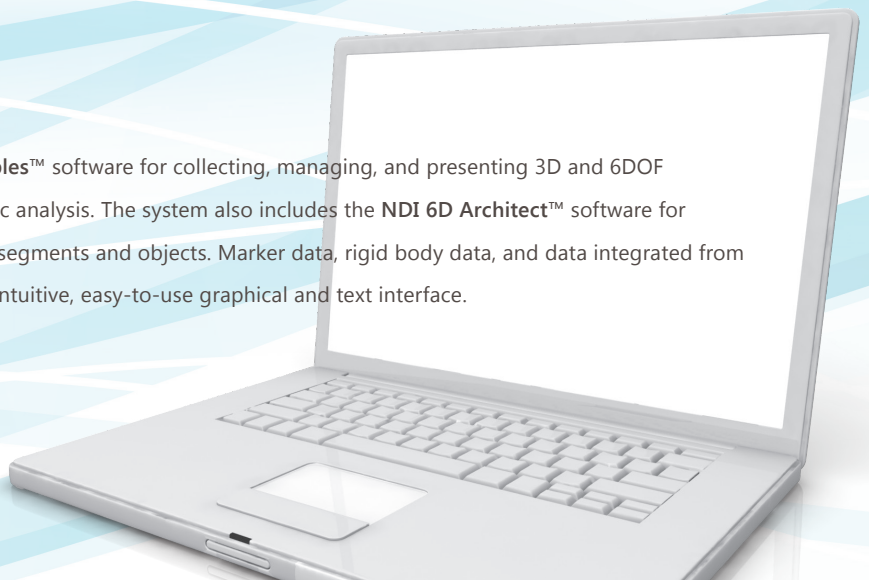
Record and synchronize analog and digital signal data from third-party devices such as EMG systems, force plates, robot actuators and more, with the Optotrak Data Acquisition Unit (ODAC).

Real-Time Experiment Control

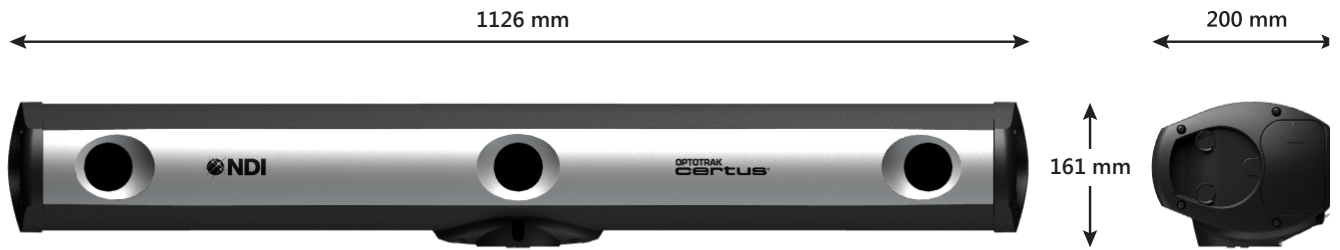
Control aspects of your experiment in real time via TCP/IP or the Optotrak API, which accepts and emits a trigger and clock signal, and supports integration with tools that provide live subject feedback.

Quick System Setup

Conduct your experiment without a lengthy system setup process. The Optotrak is pre-calibrated to allow immediate data collection, and will maintain calibration even if the optical tracker is moved.



Technical Specifications



Performance

| | |
|--------------------|----------------|
| 3D Accuracy | 0.1 mm |
| Marker Frequency | 4600 Hz |
| Maximum Frame Rate | $4600/(n+1.3)$ |
| Resolution | 0.01 mm |

Position Sensor

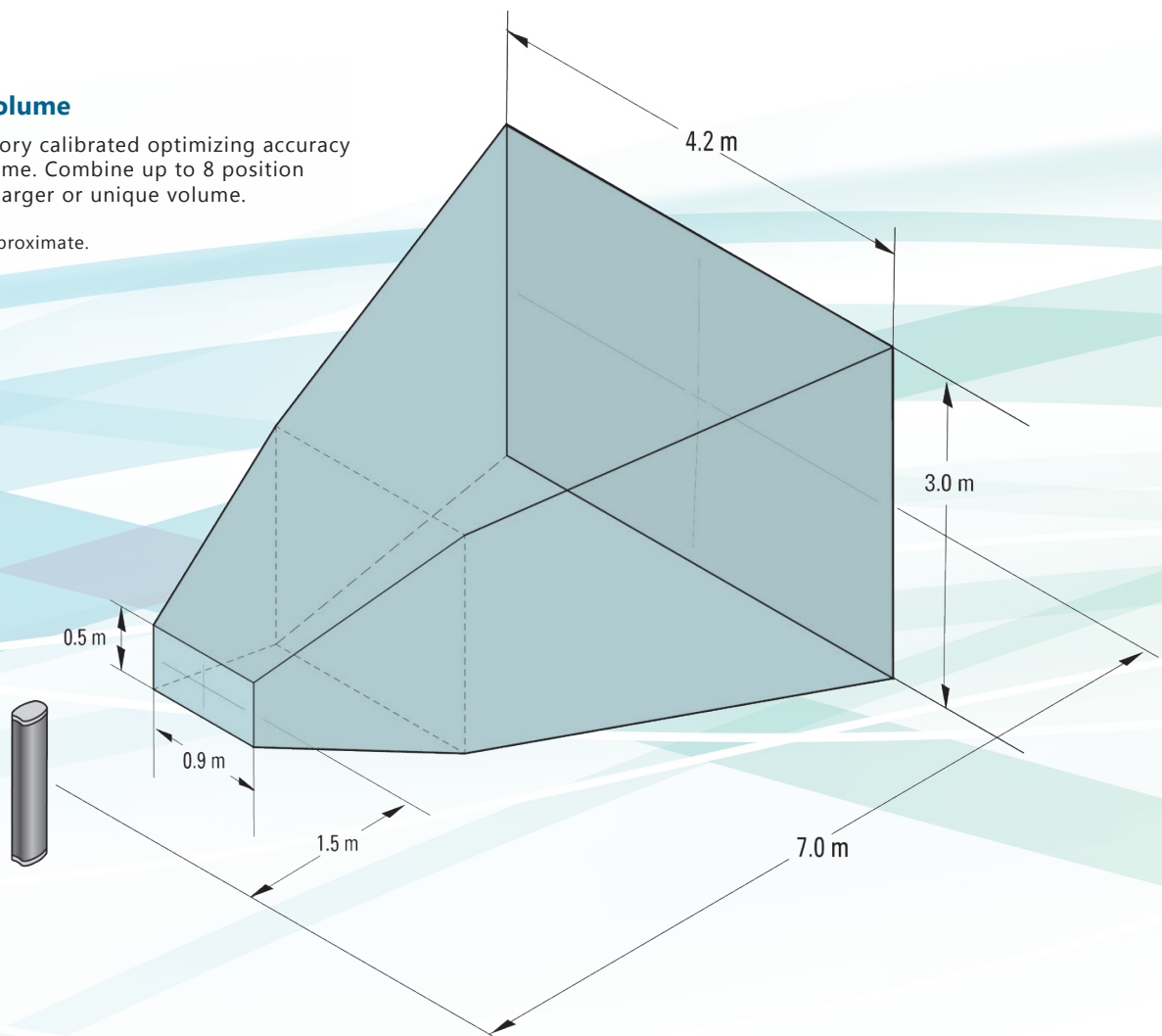
| | |
|--------------------|--|
| Dimensions (LxWxH) | 1126 mm x 200 mm x 161 mm |
| Weight | 18 kg |
| Mounting Options | <ul style="list-style-type: none"> • Portable floor mount for 6DOF in Position Sensor orientation • Wall mount for 2DOF in Position Sensor orientation |

Maximum number of Position Sensors 8 (used simultaneously)

Measurement Volume

The Optotrak is factory calibrated optimizing accuracy in the depicted volume. Combine up to 8 position sensors to create a larger or unique volume.

*All dimensions are approximate.



Measurement You Can Trust®

NDI is a global-leading innovator and manufacturer of advanced 3D measurement technology systems, with over 45,000 installations worldwide. For over 30 years, our optical measurement and electromagnetic tracking solutions have been trusted by the world's foremost organizations and institutes in academia, medicine, industry, and simulation. From neuroscience research to image-guided surgery; from aeronautics design to manufacturing quality assurance, NDI solutions are used whenever best-in-class measurement accuracy, precision, and reliability are required.



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