

Pocket lab for Biomechanics

sEMG, angle measurements, video, Biofeedback

Biomechanics AS has developed a sensor and an Android app for recording and analysis of EMG (muscle activation measurement), angle measurements in 3 dimensions and video on the same screen. Right after you have completed a recording, you can play the video, see when your muscles are activated and see what angle the sensor had then. Moreover, you can enlarge and pan on all data, see FFT analysis of EMG data and export data to CSV.



Figure 1. Screenshots of pocket lab in use.

Applications:

- Analyse technique by comparing the timing of muscle activation with synchronized video and EMG.
- Examine the symmetry of right and left with muscle activation on 2 channels.
- Discover technique differences in the activation patterns and angular displacement between people who do the same exercise.
- Estimate the proportion of type I and type II muscle fibers from the frequency spectrum of the EMG measurement based on the maximum isometric activation.
- Watch fatigue in muscles by looking at the median of the frequency spectrum of the EMG measurement.

Specifications:

- 2 channel EMG, 1 kHz sample rate, 10-480 Hz passband filter.
- Processed data (RMS) with settings for fast, medium and slow movements.
- Automatic calculation of average, max and min of displayed time range.
- Rotation angles in 3 dimensions based on 9-axis sensor
- 6 hour battery time, fully recharged in one hour with micro usb
- App storage
- Easy to use
- Including Samsung tablet (8" Android with 1080p30 video)

Price pocket lab: EUR 1 800. (ex VAT, ex shipping).