



# AccuPower Software

## Collect. Analyze. Compare.

### AccuPower Software 4.0 Value Proposition

The number one priority for the AccuPower and AccuPower Suite software solution is to provide a streamlined and efficient process for administering a wide variety of movement screens and efficiently share the results to all interested stakeholders. A primary focus is to implement a testing protocol in less than 5 minutes and have a meaningful conversation about a basic analysis within another 5 minutes. **It is essential the entire process take < 5-10 minutes.**

The process for data collection and the presentation of a powerful, integrated analysis is streamlined and efficient. The intended workflow would have

- the athlete performs a standard warmup
- collect necessary trials and immediately be presented with an analysis that provides basic, useful information about their performance.
- Clinician/Coach/Trainer will replay video so the athlete/patient can see slow motion replay of each camera view. Video replay allows Clinician/Coach/Trainer to immediately navigate to key events in the movement cycle
- Dashboard display of key variables and highlights changes to baseline
- Share data with other key stakeholders

Through the synchronization of kinetic data from the force plates and high-speed color video (> 200 fps), such a streamlined process is feasible.

It is impossible to execute a traditional, marker-based kinematic analysis and communicate key variables to a non-technical person in <15 minutes. The feedback we have received from Clinicians, coaches, sport scientists and trainers are they **place high value on magnitude and timing of loading parameters and joint positions at key events during a movement cycle**. These basic elements appear to be a consistent priority. However, each professional has slightly different priorities with regards to the actual variables calculated and presented.

The AccuPower and AccuPower Suite software addresses these needs by collecting three-dimensional Force-Time data for a wide variety of movements and integrating synchronized high-speed video (multiple camera views) in two dimensions. The analysis for each movement will provide a basic but useful kinetic analysis with integrated video.

- Users can customize their analysis by selecting KPI's for display in the replay dashboard
- Customize the dashboard display to highlight changes to baseline for purposes of demonstrating training progression or for return to play decisions
- Users can create custom variables through a variable creation feature
- Fully featured video replay tools with real time force vector overlay

In essence, **these features provide each user with a custom, proprietary software!!**

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- Workflow simple and intuitive for data acquisition and data sharing
  - Less than 10 min to complete basic assessment and analysis
- Quantitative analysis includes
  - Measures of Force, Impulse, or Rate of Force Development at or between key events in the movement cycle
  - Graphical display of time series data for three dimensional forces and moments of force, velocity, and power.
  - User customized data tables to display variables of most value to the coach/sport scientist/trainer
  - Customize the dashboard display to highlight key variables and changes to baseline
  - Instant within and between athlete statistical analysis
- Clear presentation high-speed color video at key events in the movement cycle
  - Full featured video replay tools
  - Easy navigation to all camera views
  - Easy navigation to key events in the movement cycle
  - Orientation of the resultant force vector superimposed in camera views
- Add personal expertise to the analysis
  - Drawing tools for adding joint angle measurement to any video frame
  - Add notes/comments to any video frame
- Quickly and efficiently share results to key stakeholders
  - Multi-media report generated with kinetic measures included
  - Customized .pdf or Word format report
  - Customized Summary Reports in .csv format
- Locally stored ODBC compliant database, easily queried for sharing to 3<sup>rd</sup> Party software
- One software package and data handling workflow will accommodate ALL athlete readiness and skill development needs
- Includes complete array of test for jumps, landings, isometrics and strength evals,
- Possible use for integration and/or calibration of wearable devices and other emerging technologies.

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### Key Software Features

#### AccuPower Software

- Acquisition and synchronization of forces to video using USB or serial force inputs. Could accomplish the same using specified A/D and analog force outputs.
- Integrated force vector overlay in video displayed in real-time and replay
- Graphical display of time series data for three dimensional forces, velocity, power, and moments of force
- User customized data tables to display variables of most value to the coach/sport scientist/trainer
- Customize the dashboard display to highlight key variables and changes to baseline
- Fully featured video replay capabilities
- Easy navigation to key events in the movement cycle
- Drawing tools for adding joint angle measurement to any video frame
- Add notes/comments to any video frame
- Instant generation of customized .pdf or Word format report
- Instant generation of customized .csv Summary Reports
- Locally stored ODBC compliant database, easily queried for sharing to 3<sup>rd</sup> Party software
- Statistical libraries allow for real time between and within subject statistical analysis
- Pre-configured tests and analysis for
  - Jumps
  - Drop Jumps
  - Drop Landings
  - Hops
  - Isometric
  - Body Weight Squats
  - Forces Only

#### AccuPower Suite Software

- Includes all features of AccuPower Software
- Includes Pre-Configured Tests for
  - Gait
  - Balance (in development)

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