

Kistler Elevate: unleash your full potential

Software: Type 2846A1
Hardware: Type 9695A1

Portable performance analysis system

Kistler Elevate is a performance analysis system featuring state-of-the-art technology for use in sports applications. Standardized performance test protocols provide insights into the neuromuscular properties of the lower extremities. By routinely using Kistler Elevate's efficient performance tests, coaches gain an overview of their athletes' current performance capabilities and development. The Kistler Elevate web portal helps coaches to plan training for individual athletes so they can achieve their personal development goals faster and without injuries.

- Portable, robust and precise dual force plates
- Athlete Application for self-guided, autonomous testing
- Coach Application for in-depth analysis including
 - Objective performance monitoring
 - Scientific reference values*
 - Supportive training recommendations*

Description

- The **hardware (Type 9695A1)** consists of two accurate portable force plates that each contain piezoelectric force sensors and have a non-slippery strong surface. The plates are connected and powered by a single Ethernet cable. On the surface of the plate is the QR code with the identification number.
- The **software (Type 2846A1)** comes with two different applications.
 - The **Athlete Application** is optimized to run in a web browser on mobile devices. Athletes can use the QR code scanner, integrated in the application, to connect to a specific force plate. They can then choose from four different test protocols containing several vertical jumps. Voice and video support guide users through the entire data acquisition process.
 - The web-based **Coach Application** is synchronized with the results and data captured by the Athlete Application. The coach can flexibly create comparison groups with tags and filters, observe all performance metrics, and compare athletes with group averages or scientific reference data for a specific sport. The application can support the coach by offering automatic training recommendations based on the available test protocols.



Services

- **Videos:** all jumps tutorials, how to set up and use the system, software tutorials
- **Worry-free-package:** functional warranty, repair and replacement service
- Create your **own parameters:** if important parameters for your sports are not yet included in the software, please contact us and we will create the parameter you need. *

*depending on product edition

Technical data Type 9695A1 *

Dimensions	mm	600x400x59
Measuring range Fz	kN	0 ... 8
Overload Fz	kN	10
Resolution:		
	pC /bit	0.1
Fz	N/bit	0.025
Operating temperature range	°C	0 ... 50
Degree of protection (EN 60529)		IP50
Mass	kg	12.5
Force plate sample rate	Hz	500
Interfaces		1x Ethernet RJ45 connector
Power supply		Power over Ethernet: 36-57V

* this information applies to one force plate

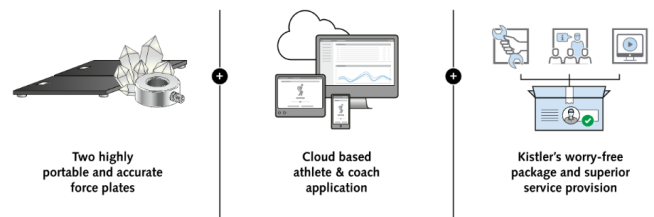
Application

The system is intended to help professional coaches optimize training for athletes in various sports such as soccer, basketball and tennis. It aims to provide coaches with insights that are not easily visible to the naked eye. In-depth analysis of movement patterns and identification of weak spots, coupled with scientific references and system-generated training recommendations, help to improve performance, prevent injuries and accelerate athletes' rehabilitation processes.

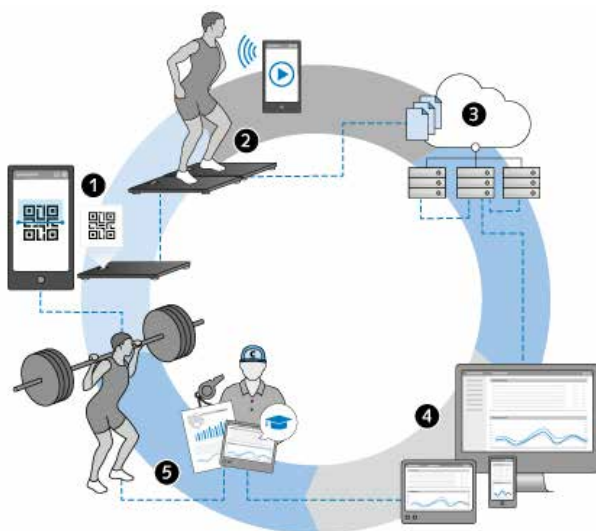
The data is stored in the cloud. This enables immediate data synchronization, and it also allows athletes and coaches to work independently at different times and in different locations. This convenient approach means that more athletes can be trained in less time, and athletes who are already familiar with Kistler Elevate do not always need a coach beside them because the Athlete App guides them through the process.

- 5 Our solution gives coaches the extra scientific support they need to develop and fine-tune workouts for each individual athlete. More clarity and more precision – putting your athletes on track for an elevated position on the podium!

System overview



Technology and usage



- 1 Athletes use the app to scan the QR code from the force plate and then choose their test protocol. Good to go!
- 2 Voice guidance and training videos guide athletes through the jumps in their test sequence – directly on their smartphone.
- 3 In split seconds, the app sends performance data to the Kistler Cloud – for access anywhere, anytime. No cables, no hard disks, no tricky connections.
- 4 Data is already visible on the athlete's phone – ready to compare and share. Coaches can access advanced options including visualizations and in-depth comparisons against scientific reference data.

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Athlete application

- **QR code reader included:** connect to the force plate simply by scanning the QR code.
- **Home screen:** select and run four standardized test protocols or choose a free protocol:
 - **Basic jumps:** bilateral squat jumps, bilateral countermovement jumps, unilateral left/right countermovement jumps.
 - **Force-velocity-power relationships:** countermovement jumps, each with progressive additional weight (0–50 kg).
 - **Anaerobic endurance:** repetitive hopping, single leg left/right countermovement jump.
 - **Progressive drop jumps:** drop jumps of different incrementally increasing heights (25–40 cm).
 - **Free protocol:** any of the above jumps, for a specified amount of repetitions.

- **Testing and performance user flow:** health status as mandatory input before each jump, demonstration videos of correct jump execution, visual and voice guidance through the testing processes, and standardized waiting times in between.
- **Result screen:** immediate performance feedback on your smartphone.

Software screenshots

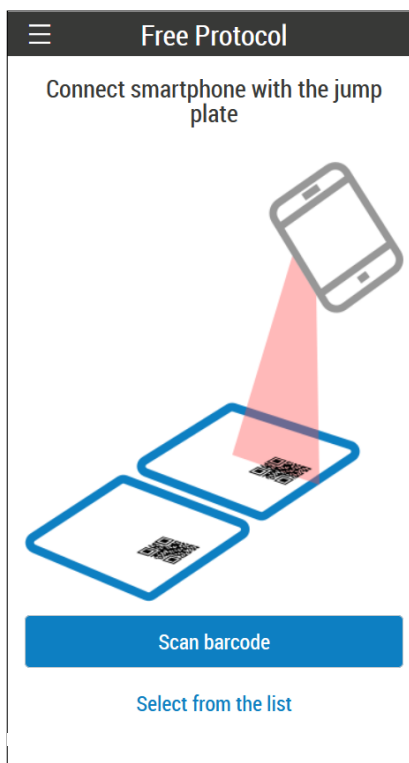


Fig. 1: The athlete connects to the force plate by scanning the QR code.

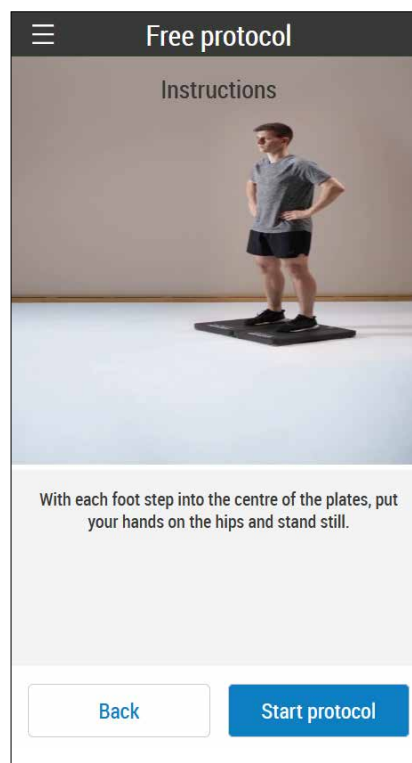


Fig. 2: Automatic guidance through test protocols

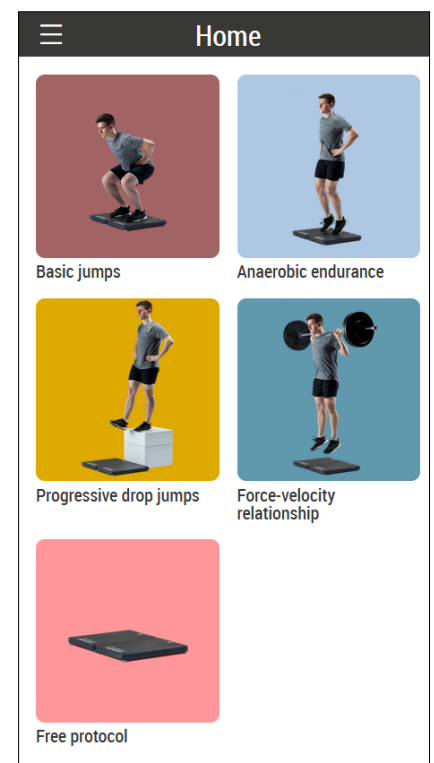


Fig. 3: Home screen: select a predefined test protocol

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Coach application

- **Home:** dashboard overview for the coach – create your own tags, filters and settings so you can group, sort and display your athletes.
- **Athletes overview:** specific dashboard for the selected athlete – observe chosen parameters of different jump types over time, display demographic and sports-related information on the athlete (such as age, sport types, height and weight).
- **Protocols:** observe all computed metrics (multiple parameters such as jump height, max. force, max. power, average power, use of elastic energy, lateral asymmetry, bilateral deficit) and compare them with the athlete’s history and personal best, team average, personal filters, selected scientific reference values*, etc.
- **Reports*:** create standardized test reports – you can export files in PDF format or export raw data.
- **Leaderboard*:** presents the ranking and best scores, also individual gains by all athletes for selected parameters.
- **Reference values*:** choose scientific reference values recorded by professional athletes in similar sports and age groups to your own athletes. You can compare selected data with your athletes’ scores on other screens.
- **User management:** add a new user or edit the user-specific data of each user.
- **Recommendations*:** create and display automatic science-based training recommendations using individual test performances as references.
 - **Basic jumps:** explosive/push-off power is assessed using the squat jump (SJ) as an example of concentric movement, and the countermovement jump (CMJ) as an example of eccentric-concentric movement. Each test assesses your effectiveness and inter-limb asymmetry during these basic high-power movements.
 - **Force-velocity:** the force-velocity-power profile provides information about the capabilities of an athlete’s musculoskeletal system; it also reveals potential limitations that should be addressed in order to improve ballistic push-off performance. Ballistic performance of the lower extremities is assessed using countermovement jumps with varying additional loads
 - **Anaerobic endurance:** anaerobic leg endurance/capacity and power are assessed with the Bosco 30-second repeated jumping task. The main goals are to perform jumps from the ankle joint and to maintain the maximum height of the jumps throughout the test. This test assesses an athlete’s ability to produce the maximum amount of energy that can be generated in a period of 30 seconds using anaerobic energy sources.
 - **Progressive drop jumps:** the power of the lower extremities (especially the musculoskeletal ankle complex) in fast eccentric-concentric conditions is assessed with progressive drop jumps. Athletes perform drop jumps from dif-

ferent starting jump heights (20 cm, 40 cm, etc.) as long as their contact time remains below 200 milliseconds and without heel strike.

*Depending on the selected product edition.

Software screenshots

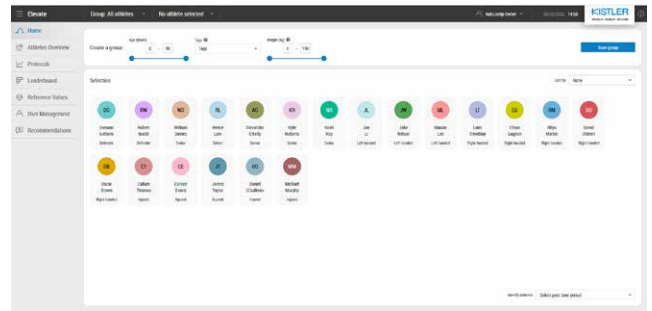


Fig. 4: Group, sort and display the athletes on the home screen

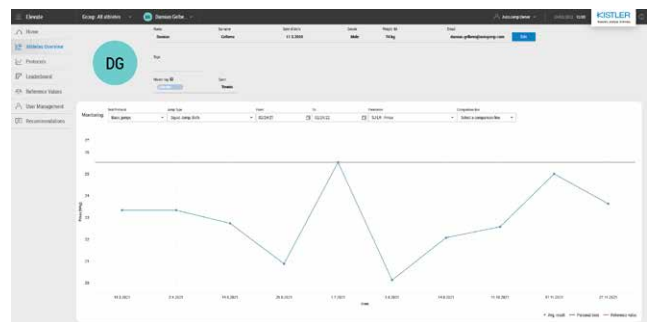


Fig. 5: Dashboard and monitoring of a selected athlete

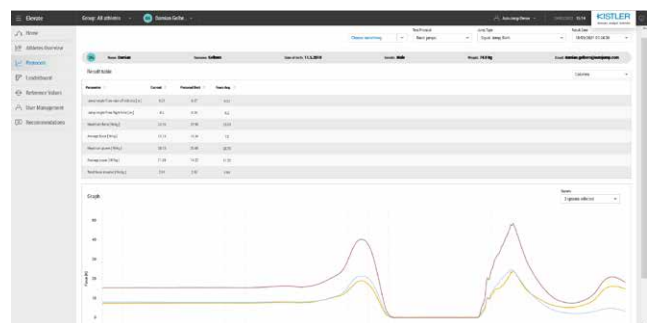


Fig. 6: Observe and display all result metrics

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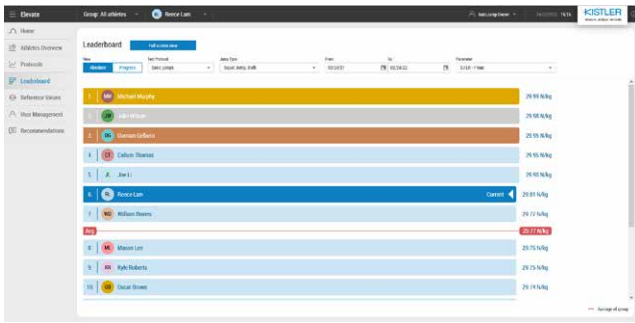


Fig. 7: Leaderboard

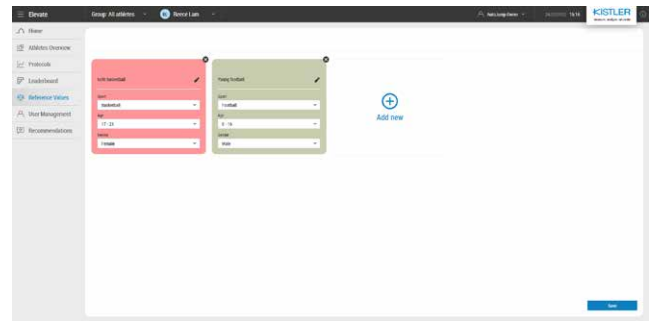


Fig. 8: Scientific reference values for comparison

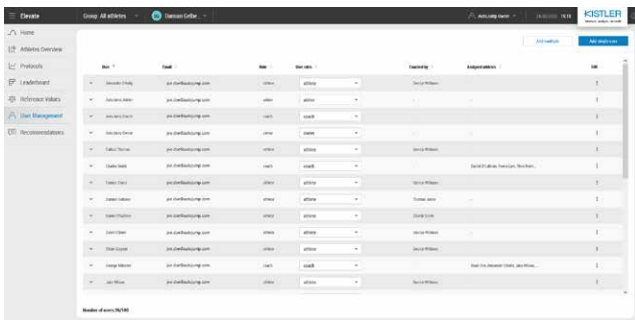


Fig. 9: Add a user or edit the user-specific data

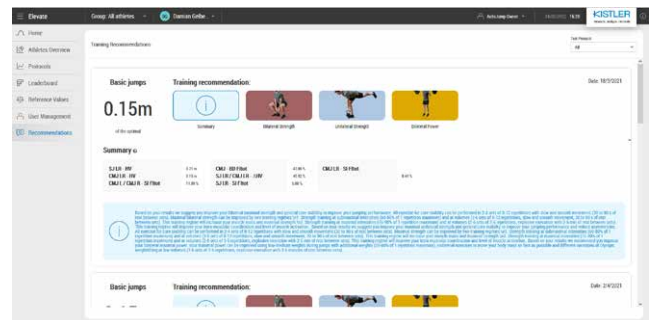


Fig. 10: Automatic science-based training recommendations

Editions

Starter

Hardware: Kistler Elevate force plates

Service: worry-free service package (including repair and replacement service)

Customized results parameters: 0

Software:

- 50 users
- Web portal for coach
- Mobile app for athletes
- Test protocols
- Fixed result parameters
- Limited export
- Monitoring

Professional

Hardware: Kistler Elevate force plates

Service: worry-free service package (including repair and replacement service)

Customized results parameters: 0

Software:

- 50 users
- Everything included in the Starter edition, plus:
 - **Full export (parameters + raw data)**
 - **Reference values**
 - **Training recommendations**
 - **Leaderboard**

Ultimate

Hardware: Kistler Elevate force plates

Service: worry-free service package (including repair and replacement service)

Customized results parameters: 5

Software:

- 150 users
- Everything included in the Professional edition
- Additional users can be purchased in increments of +100

PC and smartphone requirements

Web application:

- Google Chrome
- Mozilla Firefox
- Safari

Optional accessories

- Smartphone tripod stand
- Kistler Elevate roller case

Type/Mat. No.

55258971
9695AZ1

Order designation

- Kistler Elevate hardware
- Kistler Elevate software

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