

The KINARM™ Family

Robotics: Probing brain function and dysfunction

BKIN Technologies is a leading developer of robotic technologies for probing brain function and dysfunction. Our patented KINARM™ product line enables basic and clinical researchers to explore sensory, motor and cognitive performance in both humans and NHPs. Our robotic and software tools create complex mechanical and visual worlds. BKIN's products are paradigm shifting and hold the promise of being the first quantitative and objective system to assess sensory, motor and cognitive function - critical instrumentation for the effective management of brain disease and injury.

Our Approach

The 2-dimensional Paradigm

Fundamental to BKIN's approach is our 2-dimensional paradigm in which the workspace is restricted to a single plane. This 2-dimensional paradigm represents the optimal balance between behavioural complexity and measurement simplicity.

Integrated Virtual/Augmented Reality

Our virtual/augmented reality systems allow visual information to be presented in the plane of the workspace. Aligning the visual and mechanical environments in this manner takes advantage of the natural coupling that exists between the visual and proprioceptive systems.

Our Goal

BKIN Technologies can help you choose the right product to fit your needs. Our multidisciplinary team is experienced in neuroscience, engineering, physiology, electronics, machining and software development. We work closely with basic and clinical researchers to integrate our technologies into their unique research programs to accelerate their research and achieve their goals.



Quick Facts

- Multiple robotic platforms to fit with, and enable growth of, your research program
- 2-dimensional paradigm balancing complexity/ simplicity
- Integrated VR for natural visual and proprioceptive coupling
- Sophisticated engineering designed by neuroscientists for neuroscientists

"KINARM is a broad-based, versatile research facility that allows users to develop and design their own behavioural tasks to study sensory, motor and/or cognitive deficits."

- Dr. Stephen Scott, Professor, Centre of Neuroscience Studies, Queen's University and Inventor of KINARM

Our Products

KINARM Exoskeleton Labs™ are sophisticated platforms to monitor and manipulate the upper limb, providing a broad range of hand and joint-based kinesiological information.

KINARM Standard Tests™ is a battery of automated standardized sensory, motor and cognitive tasks that allow you to start assessing subjects “right out of the box”.

KINARM End-Point Labs™ are modular, ranging from a single stand-alone robot to a full lab with two robots, integrated virtual reality and data acquisition systems. The KINARM End-Point robot is a simple, cost effective, graspable robot that can create highly complex mechanical environments.

Platform	KINARM Exoskeleton Robot™		KINARM End-Point Robot™		
Product	Human KINARM Exoskeleton Lab	NHP KINARM Exoskeleton Lab	KINARM End-Point Robot	Standard KINARM End-Point Lab	Deluxe KINARM End-Point Lab
Robot Type	Exoskeleton		Hand-held		
Subject Type	Human	NHP	Human or NHP		
Uni/Bimanual	Uni/Bimanual		Unimanual	Uni/Bimanual	Bimanual
Workstation	Included		Optional	Included	Included
Dexterit-E + computer systems	Included		Optional	Included	Included
Display Type	Virtual Reality (VR)		Optional	Desktop Display	Virtual Reality
High-resolution secondary encoders	Optional		Optional		Standard
End-point Force/Torque Sensor	Not available		Optional		Standard
Position Resolution	High	High	High (very high with secondary encoders)		Very high
Planar Stiffness	Medium	Medium	High (very high with secondary encoders)		Very high
Post-purchase Upgrades	Available on All Subject to Component Availability				
Base Price (USD)	\$\$\$/\$\$\$\$	\$\$\$/\$\$\$\$	\$	\$/\$\$	\$\$\$

Our Customers

Our customers conduct basic and clinical research to answer fundamental questions on sensory, motor and cognitive function. KINARM products allow our customers to conduct:

Basic research on brain function

- Coordination of multi-joint and multi-limb motor actions
- Learning in altered visual or mechanical environments
- Solving complex cognitive problems
- Perceptual aspects of proprioception and body image

Clinical research on brain health

- Quantify motor, sensory and cognitive deficits associated with a neurological disorder
- Identify novel biomarkers for clinical assessment
- Quantify patient performance for novel rehabilitation strategies