SMI
SensoMotoric Instruments

World's First!

Eye Tracking Solutions

PERFORMANCE MEETS EASE OF USE

RED500

All-In-One 500Hz Binocular Remote Eye Tracker

- High data quality for precise measurements of saccades, blinks and fixations
- Unprecedented ease of use and free head movement
- Low latency for faster lock-on and reaction
- All-in-One system concept for different setups
- Compatible with EEG and other sensors

product design award 2009

Designpreis Deutschland 2010 NOMINEE

www.smivision.com

MONITOR	TV	PROJECTION	DATA RATE	BINOCULAR	ACCURACY	HEADBOX	PORTABLE	CALIBRATION	LATENCY
22"	60"	1-8m	500Hz		<0,4°	40 x 40 x 20 cm		<10s (5point)	<6ms

RED500

Performance meets ease of use

The SMI RED systems combine ease of use and high data quality with high speed capabilities. Saccade measurements and shortest latencies with fully remote, fiducial-free and contact-free setup are possible, even with less compliant subject groups.

Flexible and easy setup

The RED500 includes a modular design that allows for several different configurations with the same system – from an integrated 22" monitor, to television screens, to projectors. Integrated with the 22" monitor, the system is ready to use out-of-the-box. A user-friendly wizard simplifes standalone setup with other displays.

Wide range of application areas

The RED systems are used e.g. in the field of neuroscience to analyze how we process visual information in different situations, in psychology, psychiatry & psycholinguistics to study human behavior, in usability, human factors and ergonomics to optimize the interaction, in market research to understand consumer behavior and in gaze based interaction for human communication with machines.

Robust tracking for all populations

SMI's 20 years of computer vision experience in high-performance research and medical applications has resulted in the most robust remote eye tracking system available. The system is robust regardless of eye color, age, glasses or contacts, etc, and gives immediate feedack of robustness and tracking quality.

Fast, reliable & automatic operation

The fully automatic calibration takes only seconds and maintains drift-free accuracy throughout the experiment. Flexible calibration options address experiment requirements, including 2-point, child-friendly versions.

Integration with EEG, other sensors and devices

The RED systems have proven to be easily integrated with other devices like EEG or bio sensors, as well as with camera observation systems. EEG integrations are easy e.g. with ABM, ANT, BioSemi, BrainProducts, EGI, eMotiv and Neuroscan.

All results easy to get

The RED500 system collects all relevant eye data and allows for fast and accurate control and analysis:

- Measures gaze position on surfaces (e.g. screen, TV, projector) in screen pixels or millimeters
- Measures pupil size (relative and absolute dimensions) in pixels and millimeters
- Exports recorded data to ASCII for post-processing using statistics software (e.g. MATLAB®, SPSS®, Excel™)
- Perfectly integrated into SMI Experiment Suite 360°™ for experimental design, presentation and data analysis

Specifications RED500

Technology

- Fully automated image processing based contact free eye tracking and head movement compensation

Performance

• Sampling rate	500Hz
• Tracking resolution	0.03°
• Gaze position accuracy	< 0.4° (typ.)
• Operating distance subject - camera	60 - 80 cm
• Head tracking range	40 x 40 cm at 70 cm distance
• Latency (end to end)	<6ms (typ.)

System

• Workstation	Desktop or Notebook
• Monitor	22" widescreen 19" (optional)

Interface

- Modular design that allows different setups with the same system – from an integrated 22" monitor to TV screens up to projections of any size

Auxiliary devices / communication

- User video and audio recording
- Free SDK/API
- Easy integration with third-party stimulus and analysis packages such as MATLAB®, Presentation®, E-Prime®, Superlab™ and others
- Compatible with EEG and other sensors

Software options

- SMI Experiment Suite 360° (incl. BeGaze™2 & Experiment Center™2)

System options

- Flightcase
- Combosystem with iView X HED, Hi-Speed etc.

Norm compliance

- CE, EMC, Eye Safety

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