

# EyeLink II Technical Specifications:

## Tracking Modes

Mode	Sample Rate	Average Delay (Filter Off/On)	Noise (RMS)	Stability
Pupil Only	250 or 500Hz	3 ms / 5 ms / 7 ms	< 0.01°	Affected by headband slip and vibration
Pupil-Corneal Reflection (Pupil-CR mode)	250Hz	6ms / 10ms / 14 ms	< 0.022°	Good rejection of slip and vibration

## Operational / Functional Specifications

Image Processing	Fully Digital
Pupil Tracking	Hyper acuity
Corneal Reflection Tracking	Hyper acuity, ultra low noise
Resolution (Gaze)	<0.005° (pupil and CR)
Velocity Noise	<0.5° average
Pupil Size Resolution	0.1% of diameter
Eye Tracking Range	±30° horizontal, ±20° vertical in pupil only mode.
Gaze Tracking Range	±20° horizontal, ±18° vertical
Head Tracking Distance	40-140cm (standard), -300 cm (Special markers)
Head Rotation Compensation Range	±15° for best accuracy, ±30° conditional on gaze angle
Head Position Compensation Range	Horizontal and vertical movements less than the width and height of display, and ±30% of the display-to-head distance at calibration
Built-in calibration, validation	Calibration / Validation using Pupil or Pupil-Corneal Reflection (pupil-CR) mode
Operating Environment	Tolerates significant indirect IR, pupil-CR mode can tolerate more headband slippage than pupil only mode
Subject Compatibility	Most eyeglasses and contact lenses do not present a problem in pupil only mode; still highly compatible in pupil-CR mode
Data File	EDF
EDF File and Link Data Types	Eye position, HREF position, gaze position, pupil size, buttons, messages, digital inputs
On-Line Eye Movement Analysis	Saccades, fixations, blinks, fixation updates
Real-Time Operator Feedback	Eye position cursor during calibration, validation, and recording. Camera images and tracking status.