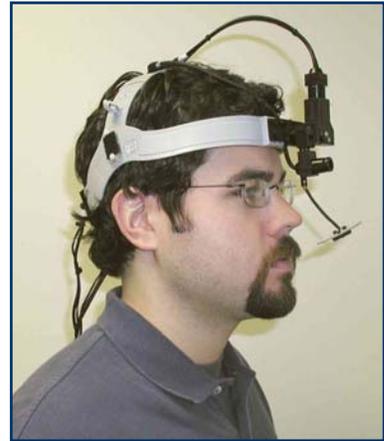# Model H6

ASL Model H6 is a complete eye tracking system for use in situations where the subject can wear lightweight, head mounted optics and must have unrestricted freedom of movement. It includes all necessary equipment to begin work immediately. The system control unit is compact in size. The optics are lightweight and mounted on an adjustable headband. The scene is recorded with a color camera that can be mounted on the headband or on a fixed tripod. The images from the eye and scene cameras are displayed on two external 9″ monitors. ASL EYEPOS operating software and EYENAL off-line data analysis software programs are provided for installation on a PC or laptop computer.

◎ Data Output

The Model H6 is designed to measure a subject's eye line of gaze with respect to the head. The measurement is displayed as a cursor or set of cross hairs superimposed on the image from the scene camera. A videotape of this image can be created as a permanent record and used for data analysis.

Recorded data include time, x and y eye position coordinates, and pupil diameter. External data events/marks can be recorded along with the eye tracker data. If the Model H6 includes the optional magnetic head tracker, head position and orientation are also recorded.

Model H6 EYEPOS operating software provides the system operator with the ability to enter calibration and subject data, and specify the operating parameters of the Model H6. EYEPOS also converts the eye tracker data records into ASCII format for transmission to other computers or for off-line spreadsheet analysis. Data is available directly from the Model 6000 control unit through a serial port (RS232). The Model H6's interface PC can be connected to an Ethernet network, permitting data analysis from remote locations.

◎ Data Analysis Software

EYENAL data analysis software is a set of off-line analysis programs for displaying and processing eye position and pupil diameter data that have been recorded with the Model H6. EYENAL programs identify fixations, plot scan patterns, let the user define areas of interest on the stimulus scene, tabulate pupil diameter and compute various statistical parameters.

◉ EYEHEAD Integration

When combined with an optional head tracking device and ASL's EYEHEAD integration software, the Model H6 can also measure a subject's eye line of gaze with respect to stationary surfaces in the environment. Data files generated contain the identification numbers of the surfaces being viewed (maximum of 20 surfaces can be defined), line of sight coordinates on that surface, distance from the eye to the surface being viewed, and pupil diameter. These data files can be analyzed by the EYENAL programs.

◉ Optional Equipment

The Model H6 can be used with a wide variety of optional equipment. A second set of optics can be added to the headband to provide simultaneous measurement of both eyes. If the research includes the study of saccades, a high speed camera (120, 240 or 360Hz) can be added. In situations where the subject is to have considerable freedom of movement, a mobile configuration is available. In situations where it is not desirable for the subject to wear head mounted optics, and where complete freedom of movement is not required, the Model H6 can be configured with a remote optics (R6) accessory.

SPECIFICATIONS

◉ **Control Unit:**   Dimensions (H/W/D): 3 in/9.75 in/10.25 in

Weight: 4.25 lbs
Power: 100-240 VAC
        25 watts
Display: 9 inch b&w monitors for eye and scene cameras

◉ **Head mounted optics:**   Sampling and Output Rates: 50 Hz or 60 Hz

                120, 240 and 360 Hz (optional)
Measurement principle: pupil-corneal reflection
System accuracy: 0.5 degree visual angle
Resolution: 0.25 degree visual angle
Head movement: unlimited
Visual range: 50 degrees horizontally, 40 degrees vertically
Weight (includes headband, optics module monocle and scene camera assembly): 8 oz.

◉ **Included equipment:**   Series 6000 Control Unit

Headband Mounted Optics
Head Mounted Scene Camera (color)
Display Monitors (x2), black & white or internal frame grabbers
EYEPOS operating software
EYENAL data analysis software