

VisualSystem

High-end visual stimulation solution for fMRI



NordicNeuroLab's VisualSystem is a sophisticated and flexible solution for presenting visual stimuli in the MR scanner.

Displaying sharp images and brilliant colors, the VisualSystem allows the user to easily present high-quality graphics or text to the patient. The VisualSystem connects to standard PC graphics cards and has separate displays for each eye, allowing for presentation of 3D and stereo stimuli.

The VisualSystem has been designed with both patient and operator in mind. The unique design fits most head coils and is easy to mount with coil-specific adapters. The adjustable arm allows for fast positioning in the preferred angle of view. The built-in diopter correction and fine-tuning of pupil distance are easy to regulate and customize to each patient.

The VisualSystem features a unique optical design, enlarging images generated by OLED displays while keeping electrical components

outside the head coil area. The VisualSystem is connected via a fiber-optic cable entering the magnet room through an available waveguide.

Scientific studies indicate that the presentation of visual stimuli in fMRI experiments is more reliable with direct input through video goggles than with the use of conventional projection systems. Because the VisualSystem is placed close to the eyes, individuals are less likely to experience discomfort related to the confined space of the MR scanner.

EyeTracking Camera

The NNL EyeTracking Camera, which is integrated into the VisualSystem and available as an optional add-on feature, provides the necessary hardware to produce a video of the subject's eye in an MR environment. The core component is an MR-compatible camera, which, thanks to a built-in infra-red light source, also works in darkness. The obtained composite video signal can be used to simply monitor, or, with the help of eye tracking software, to record and analyze eye movements. As a standard, NNL provides a single camera solution for the monitoring of either the left or the right eye. On request, binocular setups capturing the movements of both eyes are available.

The EyeTracking Camera is also available as a stand-alone product.



FEATURES

- built-in diopter correction
- pupil distance adjustment
- stereo/3D capable

TECHNICAL SPECIFICATIONS

VisualSystem

- format: SVGA, 800 (x3) x 600 pixels
- refresh rate: 85Hz
- FOV: 30° horizontal, 23° vertical
- aspect ratio: 4:3
- colors: 16.7 million colors

EyeTracking Camera

- image type: dark pupil
- FOV: 20mm diameter
- output signal:
EIA (NTSC) video signal,
60Hz half frame
- output impedance: 75Ω

Signal Transfer

- fiber-optic cable through waveguide