PHOTON CAP

A PORTABLE & WIRELESS **FNIRS** ECOSYSTEM

CORTIVISION
NEW LIGHT ON HUMAN MIND

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PHOTON CAP

FULLY PORTABLE & WIRELESS
FNIRS ECOSYSTEM

ABOUT

The **Cortivision Photon Cap** is a wireless near infrared spectroscope (NIRS) for the functional measurement of the hemodynamic response of the brain. Our device enables non-invasive monitoring of the activity of selected areas of the cerebral cortex, thanks to a set of high-quality emitters and detectors. The Photon Cap is fully:

MOBILE

Can conduct tests on the move and in naturalistic non-laboratory conditions.

SAFE

Significantly less invasive than sunlight and passed all safety and scientific-grade trials.

COMPATIBLE

Compatible with various devices like EEG or VR goggles to provide data that suits research and business purposes.

SPECIFICATIONS

GENERAL

- 16 LED emitters (760 nm & 850 nm)
- 10 detectors with an area of 7.5 mm²
- Up to **40 channels, fully user-configurable** montages
- ADC: 32-bit high dynamic range converters.
- Sampling rate: variable, up to 92 Hz.
- Communication: **Bluetooth**
- Over **6 hours** of battery life
- Integrated IMU module (accelerometer & gyroscope)

TECHNOLOGY

Near-infrared continuous waveform spectroscopy based on modified Beer-Lambert law.

MEASUREMENT

oxy (oxyHb), deoxy (deoxyHb) and total (totalHb) **hemoglobin concentration** changes

USE CASE **PRESENTATION**

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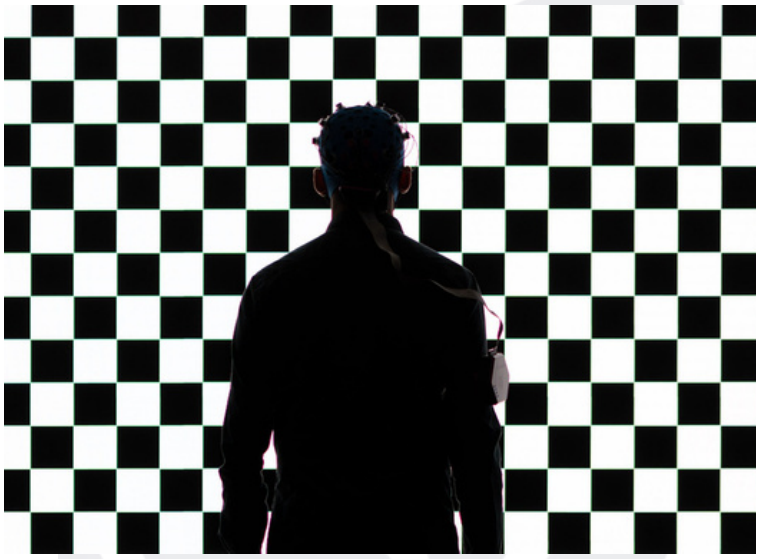

NEUROSCIENCE

For research in the field of psychology, behavioural and cognitive neuroscience.

Monitor the impact of a stimulus as part of neurophysiological research procedures. Discover the possibilities offered by Photon Cap's family of spectroscopes with professional signal recording software.

HYPERSCANNING

Registration of brain activity of several people at the same time. Discover the way people in groups function and collaborate mentally with each other.

MENTAL HEALTH

Analyse your ability to concentrate and relax your mind. Learn how the brain can control stress, distraction and assimilate information better.

SPORT

Monitoring of brain activity during movement. Obtain real-time data of brain activity during various free movement behaviours.

VIRTUAL REALITY ENVIRONMENT

Research experiments in virtual reality. Take advantage of the possibilities offered by a fully controllable test environment in virtual reality. Build any environmental conditions and examine their true impact on participants. This is a unique & innovative solution for neuromarketing, design, UX/UI, HR and education purposes.

Please note that our devices are not medical devices, we design and test them to be the highest standards and scientific rigor.

SUPPORT & SERVICES

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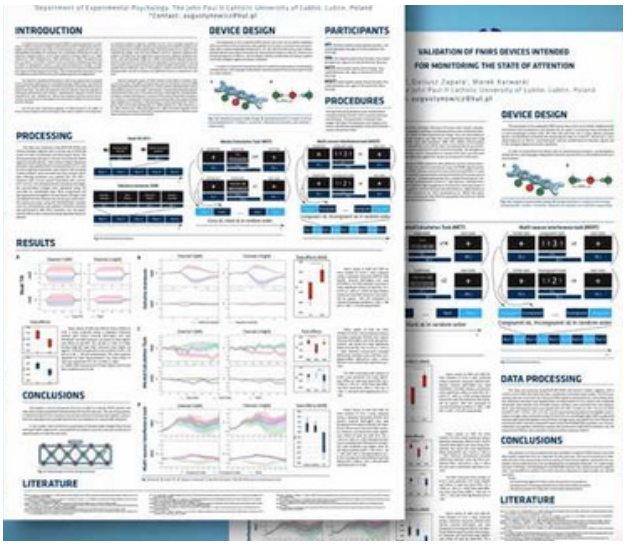
SCIENTIFIC CONSULTATION

All our devices are subject to technical support in the event of a possible dysfunction. More importantly, as part of research cooperation, we also offer a **specialised set of research support services** including:

- designing research procedures,
- adjusting the assembly of emitters & detectors to the specificity of the research problem,
- support in the selection of test procedures and at the signal recording stage,
- support in integrating the device with external software and VR headset,
- analysis and interpretation of the test results,
- preparing the results according to the journal's editorial requirements



USABILITY

Our experts are also ready to support the use of Photon Cap spectroscopes in **fields related to usability and user experience design** such as neuromarketing, design, human resource management and others.

TRAINING

We also respond to training needs, offering **additional professional support** in:

- Extended training in constructing methods of experiments in fNIRS and/or multimodal studies (fNIRS + EEG + peripheral signals, etc.)
- Training in fNIRS data analysis in MATLAB using the HOMER3 package
- Integration of Photon Cap with test systems from other manufacturers

AUSTRALIAN INSTITUTES USING PHOTON CAP

WOOLCOCK
LEADERS IN BREATHING & SLEEP RESEARCH

UNSW SYDNEY Research Imaging NSW
Human Imaging Research Facility

MACQUARIE University
SYDNEY·AUSTRALIA

UNSW Ageing Futures Institute

INTERESTED IN PHOTON CAP?

Contact our team at **Aerobe** if you have any enquiries about this innovative fNIRS breakthrough, or if you would like a demonstration of the device.

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