

# PBM Helmet Test Report

Jun 26, 2024

Prepared for: PBM Foundation

From: MegaLabs + Light Matter  
Interaction Inc.

## 1. Method of measurement

Spectra were measured by an OptoSKY ATP2000P spectrometer equipped with a 50 $\mu$ m slit and covering a spectral range of 283-1122nm. Calibration for the spectrometer was conducted by the manufacturer on April 29, 2024.

LED powers were measured by an Gentec PH100-Si-HA-D0 power meter with a maximum power capacity of 36mW and a wavelength range spanning from 350nm to 1080nm. The power meter mounts a pinhole with diameters of 1mm (Thorlabs P1000K). Calibration for the power meter was performed on Dec 20, 2022, with the calibration due date set for Jun 20, 2024.

All measurements were carried out under ambient conditions, with a temperature of 23°C and a relative humidity of 40%.

## 2. Results

The calculated irradiance is listed in Table 1.

The spectra of LED are shown in Figs. 1 and 2.

Oscilloscope testing for the LED pulses are shown in Figs. 3 and 4.

**Table 1 Measured values**

	Neuronic	Vielight NeURO			
		Front	Back	Back left	Back right
Peak Irradiance (mW/cm <sup>2</sup> ) Pinhole: $\varnothing$ 1mm	12.1	208.6	297.5	290.4	301.6
Peak wavelength (nm)	1055	809	810	810	811
FWHM (nm)	44 (1024-1068nm)	26 (791-817nm)	26 (818-792nm)	26 (792-818nm)	26 (793-819nm)

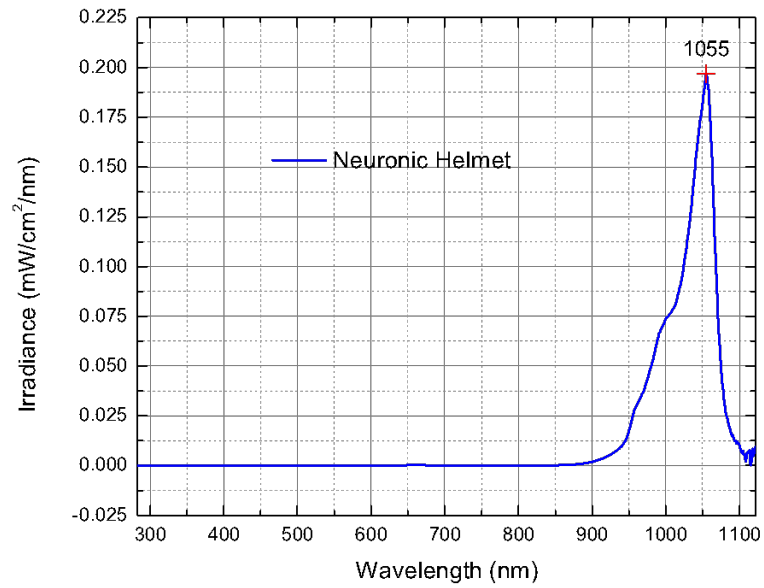


Fig. 1 Spectral distribution of Neuronix Neuradiant helmet

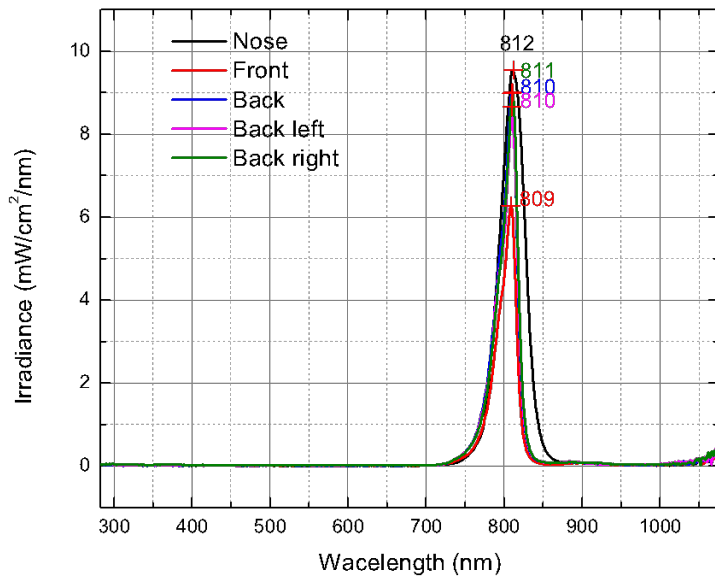


Fig. 2 Spectral distribution of Vielight NeURO Head set

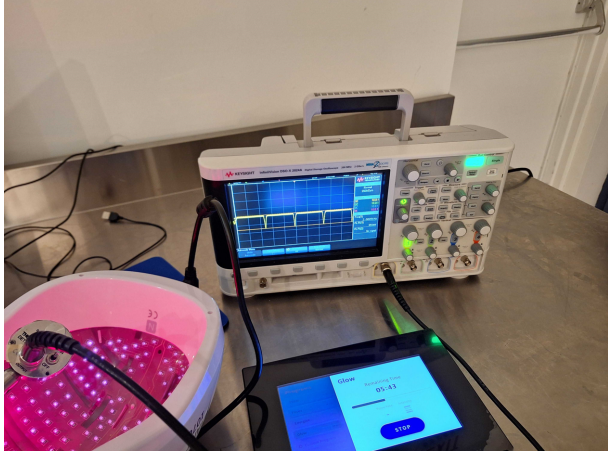


Fig. 3 Neuronic helmet: 2kHz LED Modulation

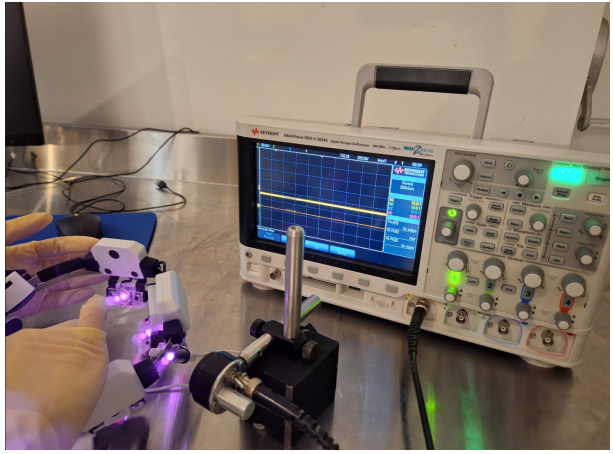


Fig. 4 LED for NeURO Head set: CW