

Multi-Wavelength Photometry System

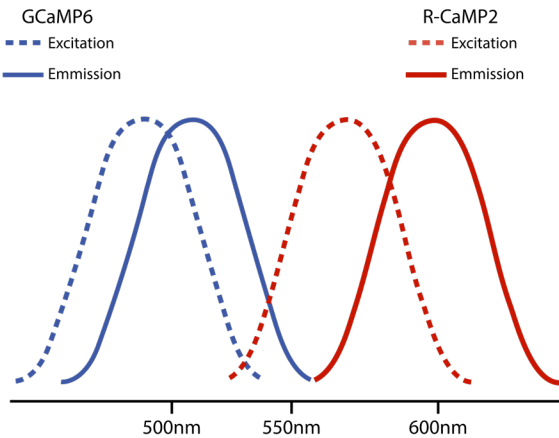
Plexon's multi-wavelength photometry system has the capability to deliver multiple wavelengths of excitation light and the ability to detect multiple wavelengths of emitted light. The photometry system offers three excitation ranges centered at 560 nm, 465 nm, and 410 nm and two detection ranges centered at 600 nm and 525 nm. These ranges were chosen to operate with two of the most popular genetically encoded calcium indicators, GCaMP6 and R-CaMP2.

Features

- Record from multiple locations in a single animal or many animals simultaneously with a single system
- Three excitation ranges centered at 560 nm, 465 nm, and 410 nm
- Detect fluorescence at 525nm and 600nm using two detection cameras
- Synchronize photometry signals with behavioral events
- Incorporated LED driver
- Integrated video tracking software

The Multi-wavelength Photometry system offers three excitation wavelengths:

- 465 nm for selectively activating GCaMP6
- 560 nm for selectively activating RCaMP2
- 410 nm for use as an isosbestic control to detect calcium-independent signals



Tracking and Data Analysis Software

- Visualize raw photometry data and $\Delta F/F$ in real time
- Heatmaps for each individual fiber illustrate changes detection while recording
- Create zones and automatically count the number of behavioral events that occur during recording
- Define photometry events based on $\Delta F/F$ threshold crossings and combine with behavioral events to identify if a change in fluorescence occurs during a specified behavior
- Interface with External Equipment
- Record subject along with speed, position, and orientation tracking

Photometry Module

Excitation wavelength	410 nm, 465 nm, 560 nm
Detection wavelength	505-545 nm, 580-620 nm
Number of fibers	Up to 4
LED driver	Yes, four high current LED drivers
Trigger Interfaces	Yes, eight camera trigger interfaces
Digital Inputs	12
Digital Outputs	12
Timing Interface	Yes
SPI Interface	Yes

Behavioral Camera

Resolution	656 (H) x 492 (V)
Max frame rate at full resolution	60fps

