

aoLED



The **aoLED** device integrates a linear and stable LED driver with a fiber-coupled LED for optogenetics. The device is a compact and powerful all-in-one optogenetic stimulus system able to generate a high bandwidth (up to 1MHz) and high intensity light signal (approaching 500 mW/mm²) out of a 200um core fiber with a 0.66 NA. The electronic design for high precision analog signal modulation opens the possibility to experiment new light shaping with ramps, sinusoids or modulated signals or fast digital modulations to generate sharp and stable stimuli.

The embedded light power sensor enables a precise monitoring of generated signals, tracking stability and potential decay of the optical output power over time which compliments the information coming from the analogue current feedback used to monitor the flow of current through the LED.

Main features



Outputs to monitor the real current on LED and the actual light power



Colors for optogenetics applications: Blue (460nm) and Amber (590nm) and many others are available on request



0-5V/TTL

Plug and play without any parameter setting: 0-5V analog or TTL 5V compatible MCX input



Optimized passive thermal design for high stability for short and long period alike



Very low electromagnetic emissions (EMC) to minimize noise in experimental environments

aoLED SPECIFICATIONS	
Max LED current	Up to 8A
Feedback control	Current flow trough the LED + Light output power
Bandwidth	1 MHz max
INPUT signals	0-5V analog or TTL compatible
Fibre cable OUT	FC connector
Fiber dimension and NA	Borosilicate fiber, 0.66NA, 200µm core, 230µm cladding
Power supply	12V – 8A max
Wavelengths available	460nm (Blue), 590nm (Amber), UV (365nm), others on request
Operating temperature	0-40 °C
Dimensions	Diameter 58 mm, height 44 mm
Weight	Approx. 150 g

RELATED PRODUCTS

Neural drives	<i>aoDrive, maDrive, mArray,</i>
Acquisition boards	<i>Open Ephys Acquisition Board</i>

STANDARS MODELS

OF000004A	<i>aoLED-Blue-HP, 460nm, 13 mW on fiber tip, 4 A max</i>
OF000005A	<i>aoLED-Blue-LP, 460nm, 2 mW on fiber tip, 0.4 A max</i>
OF000006A	<i>aoLED-Amber-HP, 590nm, 6 mW on fiber tip, 4 A max</i>
OF000007A	<i>aoLED-Amber-LP, 590nm, 2 mW on fiber tip, 0.7 A max</i>
OF000011A	<i>aoLED-365, 365nm, 2.8 μW on fiber tip, 1 A max</i>