

LED Light Source for Microscopy



BBO-NIJ-MAR-18-A

niji 虹

Preliminary Data Sheet

The niji from Bluebox Optics is a revolutionary and innovative LED light source that is ideally suited to the demands of fluorescence microscopy.



With light emission from up to seven individually addressable, individually filtered LED channels that simultaneously emit light through a single combined light guide, the niji delivers powerful, multi-wavelength excitation from the UV to the NIR, specifically for single and multiband fluorescence microscopy.

The niji takes LEDs to a new level.



Features

Modular Channels	Up to seven channels – user fit*
Sources	Solid state LED
Wavelength Range	380 - 730 nm available
Noise Level	Approx. 47 dB
Bandpass Filters	Individual bandpass filter holders for each channel
Light Interface	Liquid light guide with microscope collimators, available separately
Connection	USB -A (powered), USB-B, RS232 (serial), and TTL via a 15-way connector
Operation	Control via dedicated software, MicroManager, tablet, or third party software
Programmable Commands	XML upload for complete flexibility
Optical Safety	Key switch, light guide, and lid-off interlock
Dimensions	315 x 288 x 107 mm
Weight	4.7 kg
Warranty	12 months, optional 3 years

*The niji modular chassis allows user upgrades.

Light Output

	UV	Royal Blue	Blue	Cyan	Green/ Yellow	Red	Far Red
Wavelength (nm)	395	445	470	505	556	635	725
Bandwidth FWHM (nm)	10	18	19	31	62	18	38
Typ. Optical Power (mW)	120	200	185	90	550	225	70
Recommended Filter Sets	LED-DAPI-A-000	LED-CFP-A-000	LED-FITC-A-000	LED-YFP-A-000	LED-TRITC-A-000 LED-mCherry-A-000	LED-Cy5-A-000	LED-Cy7-A/B-000

Note: Optical output powers are given for a $\varnothing 3$ mm liquid light guide, use of a $\varnothing 5$ mm light guide will provide approximately 50% more power. Wavelengths and powers are approximate and may vary on LED batch. Each niji will be supplied with full optical power and wavelength test data.



Based around a uniquely reconfigurable mainframe, LEDs and filters can be changed by the user in minutes, offering additional excitation centre wavelengths, excitation bands, and output power options, dramatically expanding the capability of the niji.

Wavelength, power, and emission channel can all be controlled, individually or simultaneously, using the manual controller (tablet) or via software.

Constant current and constant optical power LED drive modes are both selectable, enabling fast imaging speed and high excitation power stability over long periods.

Software control options are numerous and the niji can be integrated into a microscope application in a variety of ways.

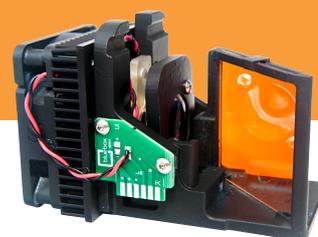
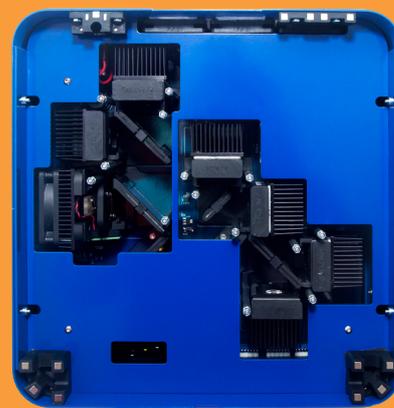
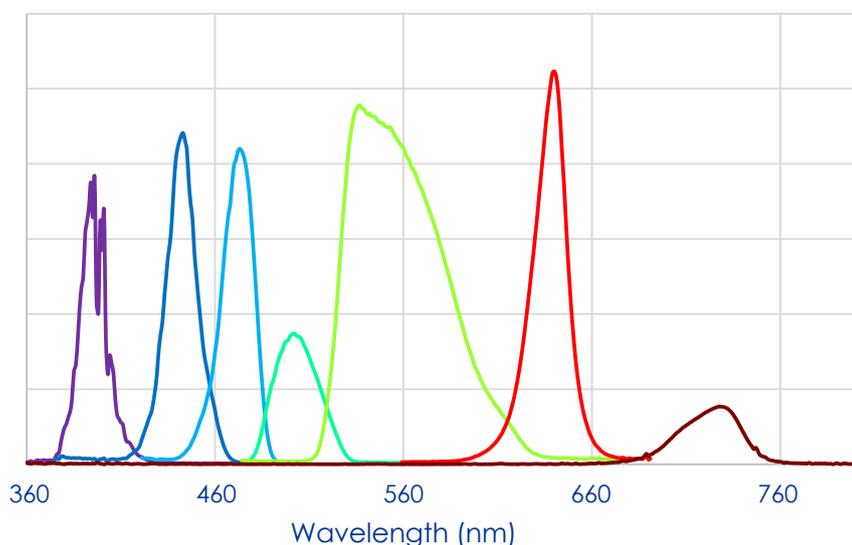
Fully compatible with MicroManager and MicroManager 2, the niji can also be operated with a wide range of industry standard microscope software packages (when operating in compatibility mode via RS232).

The niji is also mechanically compatible with most standard microscopes. Numerous adaptors, light guides, and collimators are available off the shelf, to help to simplify the task.

Furthermore, great care has been taken to make the niji one of the quietest LED sources on the market. With optimised fans running only when needed, you'll be able to hear yourself think and work, knowing that vibrations at the microscope are minimised.

If funds are tight or you don't know what wavelengths you might need in future, the niji provides the perfect solution, combining a low cost entry point with a low cost upgrade path.

Individual Wavelength Spectrum



Multi-channel 7 LED light source for fluorescence microscopy

User changeable LEDs and filters

Individual excitation filters

Fully compatible with most microscopes and microscope software

Future-proofed investment and upgrade path

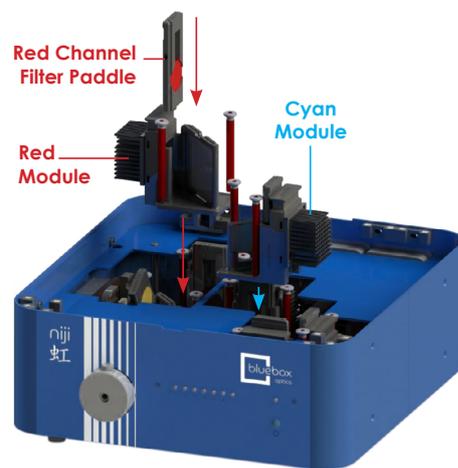
Low cost entry point

- UV (Channel 1)
- Royal Blue (Channel 2)
- Blue (Channel 3)
- Cyan (Channel 4)
- Green/Amber (Channel 5)
- Red (Channel 6)
- Far Red (Channel 7)

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Product Codes

BN7-MF-7-3-002	niji 7-Colour LED Source (complete, populated unit)
BN7-MF-0-3-002	niji (mainframe only)
BN7-LED-390-001	niji UV 390 nm LED Module
BN7-LED-440-001	niji Royal Blue 440 nm LED Module
BN7-LED-470-001	niji Blue 470 nm LED Module
BN7-LED-510-001	niji Cyan 510 nm LED Module
BN7-LED-550-001	niji GY 550 nm LED Module
BN7-LED-630-001	niji Red 630 nm LED Module
BN7-LED-720-001	niji Far Red 720 nm LED Module



Operating Requirements

Line Voltage	110V & 240V AC
Line Frequency	50/60 Hz
Power Consumption	350 VA
Operating Temperature	10 to 40 °C
Storage Temperature	-10 to 60 °C
Humidity	40% to 70% RH

Safety Certification

CE Declaration of Conformity | EMC Directive 2004/108/EC
 Low Voltage Directive 2006/95/EC | RoHS Directive 2011-65-EU
 Regulation (EC) No 1907/2006 | REACH | WEEE Directive
 IEC/EN 62471, Photobiological Safety of Lamps and Lamp Systems
 UL-certified AC power adapter

To find out more about the niji, to see a demo, or to book your free evaluation unit, call Bluebox Optics or your nearest distributor today.

At Bluebox Optics, we always provide evaluations at zero cost, and there is never an obligation for you to buy.

LED sources have a number of advantages over mercury lamps:

Low power consumption delivers significant savings in whole life cost

Zero toxicity materials are safer and easier to dispose of

Reduced out-of-band photo bleaching and filter bleed-through delivers clearer images

Controllable low level light results in reduced photo toxicity