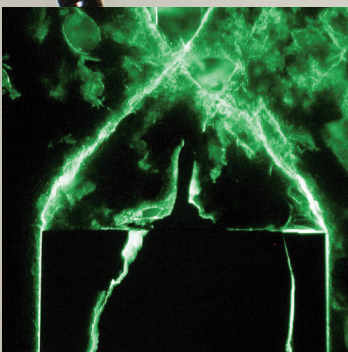
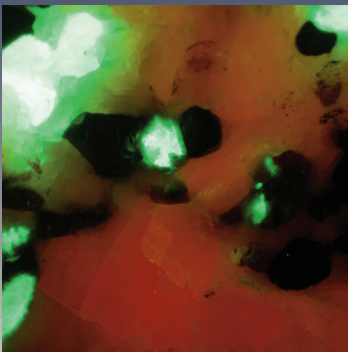
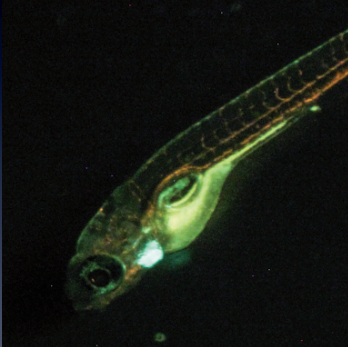




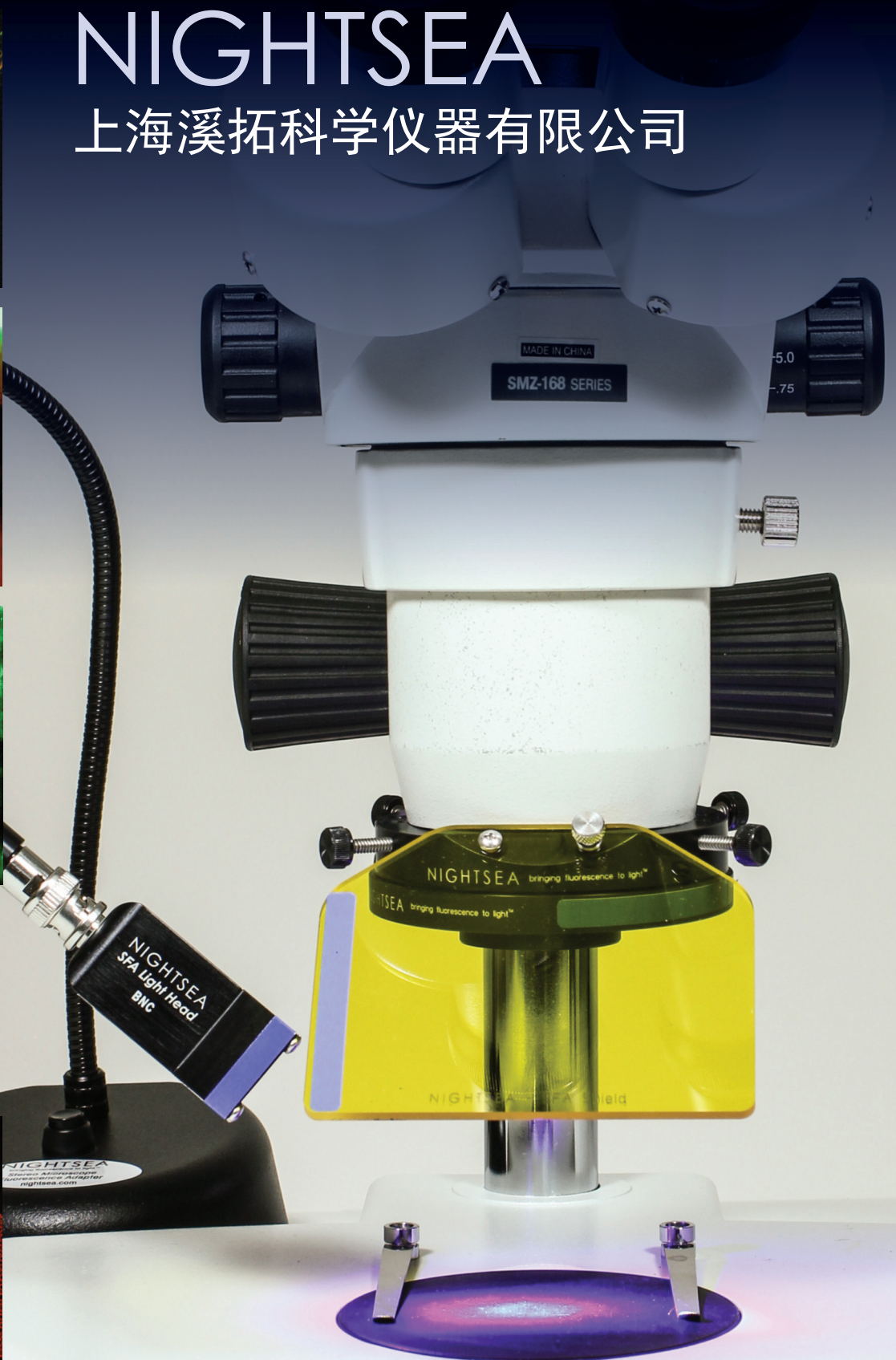
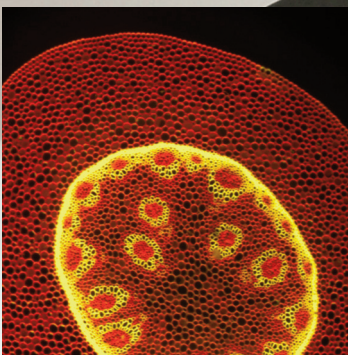
Practical and economical solutions for viewing and photographing fluorescence

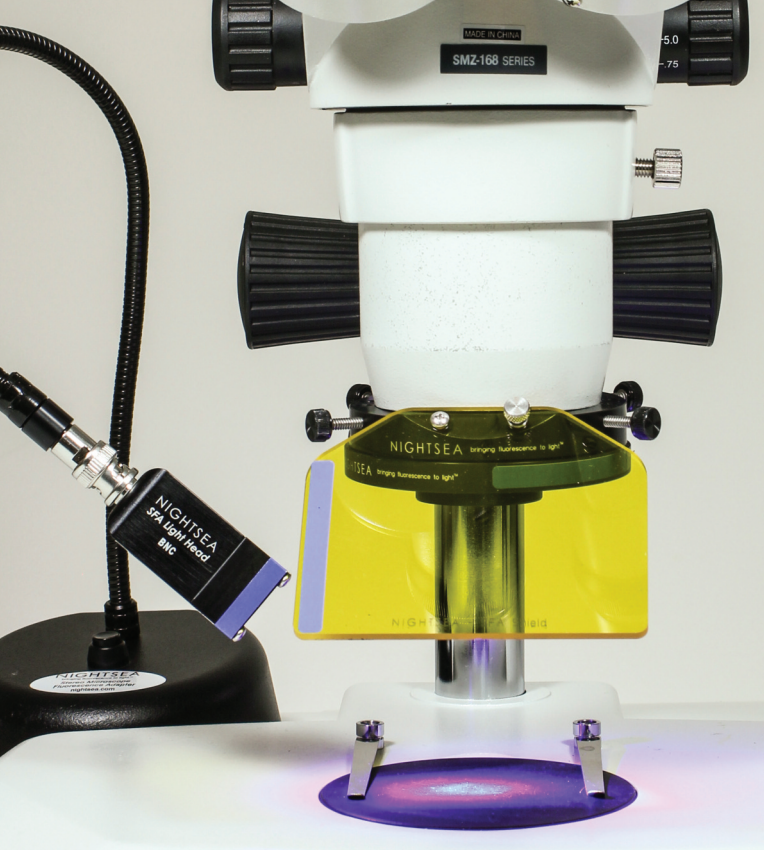
NIGHTSEA

上海溪拓科学仪器有限公司



Electron
Microscopy
ciences





NIGHTSEA Stereo Microscope Fluorescence Adapter

Adapt your existing lab stereo microscopes for fluorescence

Overview

The NIGHTSEA Stereo Microscope Fluorescence Adapter adapts just about any stereo microscope (dissecting microscope) for fluorescence with no modification to the microscope itself. The modular design lets you easily switch between several different excitation/emission combinations to work with a variety of fluorescent proteins and other fluorophores. There are now **six** different excitation/emission combinations available, plus white light.

Applications

This simple system is excellent for:

- Quick screening of your fluorescent genotypes - *Drosophila*, zebrafish, *C. elegans*,...
- Genotype sorting
- Fluorescence-aided dissection, injection, or micromanipulation
- Pre-screening sample preps for confocal or other high-resolution imaging
- Freeing up your research-grade fluorescence microscopes for more demanding work
- New faculty start-up budgets
- Bringing fluorescence into the teaching laboratory

The Stereo Microscope Fluorescence Adapter system consists of:

- Flexible gooseneck lamp base with power supply
- Adapter for microscope
- Light head
- Barrier filter
- Filter shield

The light head, barrier filter, and filter shield are interchangeable so that you can easily switch between excitation/emission light+filter combinations.

The microscope mounting adapter fits up to 67mm to work with the majority of stereo microscopes. An oversize adapter and an adapter for the Leica EZ4 series are also available.



Fluorescence isn't just for research microscopes anymore...

- Now sort on your laboratory-level stereos
- Use to facilitate micromanipulation and dissection
- Expand from your research lab to your classroom

Modular...

- Installs in seconds - just clicks into place
- Interchangeable excitation/emission combinations
- Move from microscope to microscope
- No modification to your microscope needed

Economical — More Glow for the Dough...

- Stretch your lab budget
- Inexpensive enough for classroom use

Grows as your lab grows...

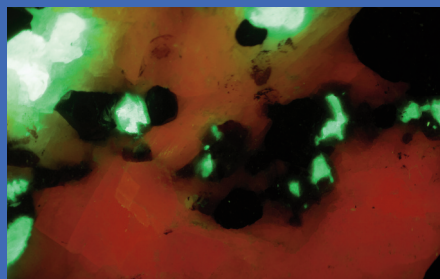
- Buy just what you need now (up to 5 different wavelength sets)
- Add more as your needs expand

Here are samples of what you can see:



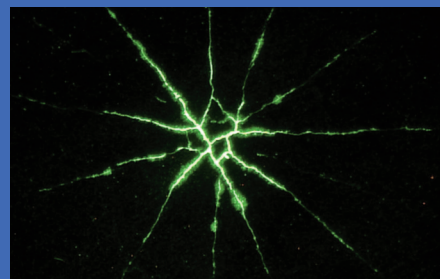
Fluorescent Proteins

GFP-tagged *Drosophila* larva



Geology

Calcite and willemite fluorescence



Industry

Electronic component failure analysis

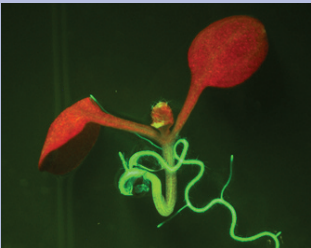
Once you are set up for one excitation/emission wavelength combination, additional combinations can be added by purchasing a kit that consists of a light head, barrier filter, and viewing shield. These three elements can be removed and replaced in seconds, and color coding ensures that you are using the right combination. The barrier filter clicks on to the ring adapter magnetically, so it is easy to remove it to switch back to white light viewing.

Wavelength Sets

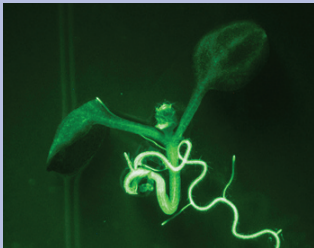
Designation	Excitation	Emission	Fluorophores
UV – Ultra Violet	360-380nm	415nm LP	DAPI, ...
VI – Violet	400-415nm	460nm LP	CFP, ...
RB – Royal Blue	440-460nm	500nm LP	GFP, eGFP, fluorescein...
RB-GO – Green Only	440-460nm	500-560nm BP	GFP, eGFP, fluorescein...
CY – Cyan	490-515nm	550nm LP	YFP, Venus, Lucifer Yellow...
GR – Green	510-540nm	600nm LP	DsRed, dTomato...

Green-Only Barrier Filter

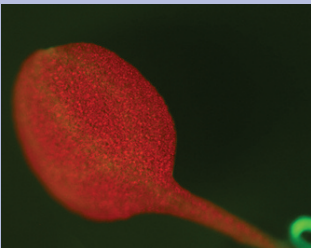
The Green-Only (GO) Barrier Filter isolates the green part of the spectrum and is for use with the Royal Blue excitation source. While our other barrier filters are long-pass filters this filter is a bandpass, transmitting from approximately 500 to 560nm. The long-pass filter has served well for most users who need to visualize green-fluorescent protein (GFP), and if you are exploring fluorescence in nature it is preferable. The primary motivation for adding the green-only filter to the line-up was for the benefit of researchers using GFP in plants such as *Arabidopsis thaliana*, a common research model. Plants contain chlorophyll, which has a distinctive red fluorescence that can sometimes mask the GFP emission, making it harder to see and photograph.



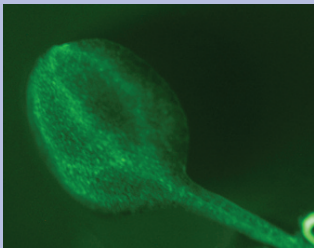
Arabidopsis fluorescence imaged with long-pass filter



Arabidopsis fluorescence imaged with bandpass filter



Arabidopsis fluorescence imaged with long-pass filter



Arabidopsis fluorescence imaged with bandpass filter

We tested this new barrier filter with *Arabidopsis* supplied by Dr. Chip Celenza (Department of Biology, Boston University). These plants express GFP in the roots and vasculature. The images above show examples of plants photographed with the long-pass filter (left) and green-only filter (right). There is no chlorophyll in the roots so the GFP is evident there in both images, but the weaker expression in the leaves is much more apparent in the images on the right.

Lamp Base Light Control Options

The SFA lamp base is available in three versions: Standard, DIM, and PULSE. Standard lamp bases provide a steady light when turned on. DIM lamp bases feature an OFF/ON/DIM switch to change the intensity of the light. PULSE lamp bases incorporate a BNC connector that accepts a voltage signal to control the excitation source ON/OFF.

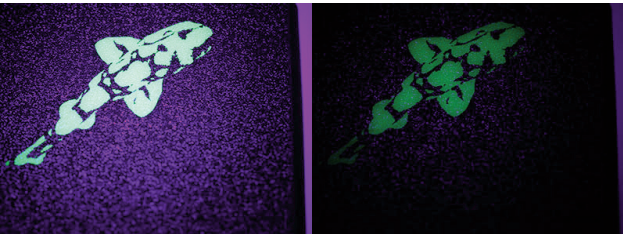
Only one control option is available per base. The DIM and PULSE options can be purchased as part of a new system, as a retrofit to an existing base, or in a stand-alone lamp base purchased a la carte.

NIGHTSEA DIM Option

The DIM option adds a combined switch and dimmer control. When you first turn the unit on it is at full power. As you rotate the switch the intensity decreases, reaching about 30% power at the minimum setting. You have finer control in the brighter portion of the adjustment range. An intensity indicator (1-10) makes it easy to record and repeat preferred settings.



Dimmer switch option on SFA



Target at max and min excitation

NIGHTSEA PULSE Option

The PULSE option adds a BNC connector on the rear of the base that accepts a user-supplied voltage input to turn the light on and off. Some possible applications are:

- External control (computer, function generator, etc.) for precise illumination timing for photoactivation, behavioral experiments
- PWM input for light dimming
- Footswitch for hands-free operation. Contact EMS for details



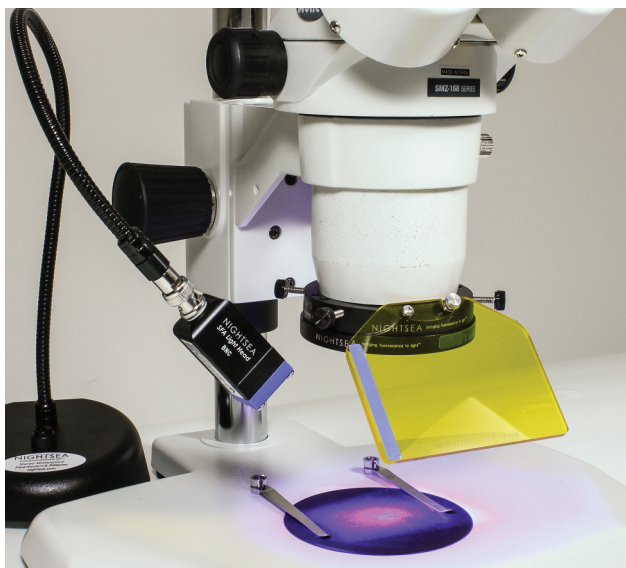
Voltage Input	2.8 - 6.0 VDC for ON, <0.6VDC OFF
Maximum Operation Frequency	10kHz
BNC cable not included	

See how it works... Learn how to do it...

We've added video content to our website to help you get to know our latest products even better!

Stop by and see what it's all about.

Ordering Information: Full Systems



Stereo Microscope Fluorescence Adapter, Full System

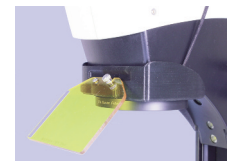
Full system with one illumination color consisting of:

- Lamp Base with Power Supply and International Plug Set
- Light Head — Ultraviolet, Violet, Royal Blue, Cyan, or Green
- Microscope Mounting Adapter
- Barrier Filter
- Viewing Shield
- Padded Travel Case

Cat. No.	Description	Qty.
Standard Lamp Base		
SFA-UV	Full System with Ultraviolet, Standard lamp base	each
SFA-VI	Full System with Violet, Standard lamp base	each
SFA-RB	Full System with Royal Blue, Standard lamp base	each
SFA-RB-GO	Full System with Royal Blue, Green-Only Barrier Filter, Standard lamp base	each
SFA-CY	Full System with Cyan, Standard lamp base	each
SFA-GR	Full System with Green, Standard lamp base	each
DIM Lamp Base		
SFA-UV-DIM	Full System with Ultraviolet, DIM lamp base	each
SFA-VI-DIM	Full System with Violet, DIM lamp base	each
SFA-RB-DIM	Full System with Royal Blue, DIM lamp base	each
SFA-RB-GO-DIM	Full System with Royal Blue, Green-Only Barrier Filter, DIM lamp base	each
SFA-CY-DIM	Full System with Cyan, DIM lamp base	each
SFA-GR-DIM	Full System with Green, DIM lamp base	each
PULSE Lamp Base		
SFA-UV-PULSE	Full System with Ultraviolet, PULSE lamp base	each
SFA-VI-PULSE	Full System with Violet, PULSE lamp base	each
SFA-RB-PULSE	Full System with Royal Blue, PULSE lamp base	each
SFA-RB-GO-PULSE	Full System with Royal Blue, Green-Only Barrier Filter, PULSE lamp base	each
SFA-CY-PULSE	Full System with Cyan, PULSE lamp base	each
SFA-GR-PULSE	Full System with Green, PULSE lamp base	each



Leica EZ4 Mount Adapter



Full System with Leica EZ4 Adapter

Full system with one illumination color consisting of:

- Lamp Base with Power Supply and International Plug Set
- Light Head — Ultraviolet, Violet, Royal Blue, Cyan, or Green
- Leica EZ4 Mounting Adapter
- Barrier Filter
- Viewing Shield
- Padded Travel Case

The Leica EZ4 Mounting Adapter enables you to use the NIGHTSEA Stereo Microscope Fluorescence System with the Leica EZ4 series of stereo microscopes, with or without integrated camera. Easily attach the barrier filter magnetically and hold the filter shield in place with a thumbscrew. The adapter is available for purchase separately to quickly move between Leica and other stereo microscopes (see below).

Cat. No.	Description	Qty.
Standard Lamp Base		
SFAZ-UV	Full System with Ultraviolet, Standard Lamp Base	each
SFAZ-VI	Full System with Violet, Standard Lamp Base	each
SFAZ-RB	Full System with Royal Blue, Standard Lamp Base	each
SFAZ-RB-GO	Full System with Royal Blue, Green-Only Barrier Filter, Standard Lamp Base	each
SFAZ-CY	Full System with Cyan, Standard Lamp Base	each
SFAZ-GR	Full System with Green, Standard Lamp Base	each
DIM Lamp Base		
SFAZ-UV-DIM	Full System with Ultraviolet, DIM Lamp Base	each
SFAZ-VI-DIM	Full System with Violet, DIM Lamp Base	each
SFAZ-RB-DIM	Full System with Royal Blue, DIM Lamp Base	each
SFAZ-RB-GO-DIM	Full System with Royal Blue, Green-Only Barrier Filter, DIM Lamp Base	each
SFAZ-CY-DIM	Full System with Cyan, DIM Lamp Base	each
SFAZ-GR-DIM	Full System with Green, DIM Lamp Base	each
PULSE Lamp Base		
SFAZ-UV-PULSE	Full System with Ultraviolet, PULSE Lamp Base	each
SFAZ-VI-PULSE	Full System with Violet, PULSE Lamp Base	each
SFAZ-RB-PULSE	Full System with Royal Blue, PULSE Lamp Base	each
SFAZ-RB-GO-PULSE	Full System with Royal Blue, Green-Only Barrier Filter, PULSE Lamp Base	each
SFAZ-CY-PULSE	Full System with Cyan, PULSE Lamp Base	each
SFAZ-GR-PULSE	Full System with Green, PULSE Lamp Base	each
Leica Adapter Only		
SFAZ-AD	Leica EZ4 Adapter only	each

Add-On Light and Filter Sets

Each add-on excitation/emission set consists of:

- Light Head
- Barrier Filter
- Viewing Shield
- Padded Storage Box



Cat No.	Description	Qty.
SFA-LFS-UV	Add-On Light and Filter Set, Ultraviolet	each
SFA-LFS-VI	Add-On Light and Filter Set, Violet	each
SFA-LFS-RB	Add-On Light and Filter Set, Royal Blue	each
SFA-LFS-RB-GO	Add-On Light and Filter Set, Green-Only	each
SFA-LFS-CY	Add-On Light and Filter Set, Cyan	each
SFA-LFS-GR	Add-On Light and Filter Set, Green	each

Modular White Light Head

This is an extremely convenient option for general illumination and as a focusing aid for fluorescence imaging. Now if you are using the NIGHTSEA system for fluorescence you do not need a separate white light source. Just exchange the fluorescence excitation light head module for the white-light module in a matter of seconds.



Cat No.	Description	Qty.
SFA-LH-WH	Modular White Light Head	each

SFA a la carte

Need an extra, not a set? Order from here:

Cat No.	Description	Qty.
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SFA Light Heads:

SFA-LH-UV	Light Head, Ultra Violet	each
SFA-LH-VI	Light Head, Violet	each
SFA-LH-RB	Light Head, Royal Blue	each
SFA-LH-CY	Light Head, Cyan	each
SFA-LH-GR	Light Head, Green	each

SFA Barrier Filters:

SFA-BF-UV	Barrier Filter, Ultra Violet	each
SFA-BF-VI	Barrier Filter, Violet	each
SFA-BF-RB	Barrier Filter, Royal Blue	each
SFA-BF-RB-GO	Barrier Filter, Green Only	each
SFA-BF-CY	Barrier Filter, Cyan	each
SFA-BF-GR	Barrier Filter, Green	each

SFA Filter Shields:

SFA-SH-UV	Filter Shield, Ultra Violet	each
SFA-SH-VI	Filter Shield, Violet	each
SFA-SH-RB	Filter Shield, Royal Blue	each
SFA-SH-RB-GO	Filter Shield, Green Only	each
SFA-SH-CY	Filter Shield, Cyan	each
SFA-SH-GR	Filter Shield, Green	each

SFA Adapters:

SFA-AD	Adapter	each
SFAZ-AD	Leica EZ4 Adapter	each
SFA-XL-AD	Oversize Adapter	each

SFA Bases:

SFA-BASE	Standard Base	each
SFA-BASE-DIM	DIM Base	each
SFA-BASE-PULSE	PULSE Base	each

NIGHTSEA DIM and PULSE Retrofit Options

The DIM and PULSE options for the base (see page 3) can be retrofitted to existing Model SFA Stereo Microscope Fluorescence Adapters.

Cat No.	Description	Qty.
SFA-BASE-DIM-R	DIM Option — Retrofit	each
SFA-BASE-PULSE-R	PULSE Option — Retrofit	each

Fluorescence Adapter for Dino-Lite Digital Microscopes

The NIGHTSEA Model SFA Stereo Microscope Fluorescence Adapter can be used with the Dino-Lite series of digital microscopes. While Dino-Lite does offer some models with fluorescence built in, in some cases you can achieve improved performance by using the SFA excitation light sources in combination with matching barrier filters pre-mounted in a Dino-Lite endcap so that they just snap onto the front of the microscope.

Since there is no provision for mounting a filter shield on the Dino-Lite, the SFA system for Dino-Lite will include a pair of barrier filter glasses for each wavelength purchased.

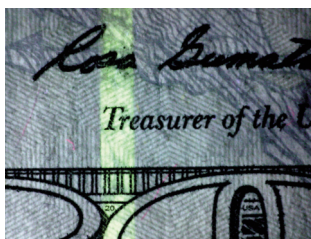


Dino-Lite digital microscope paired with NIGHTSEA fluorescence excitation light source

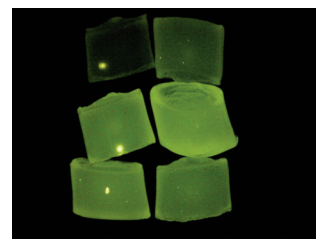


Dino-Lite digital microscope with array of NIGHTSEA barrier filters

A sampling of images we have made with the Dino-Lite/NIGHTSEA combination.



Fluorescent markings in currency. Dino-Lite + NIGHTSEA UV excitation



Gel defect in nylon granules. Dino-Lite + NIGHTSEA Royal Blue excitation

Wavelength Sets

Wavelength sets are named and color coded for the color of the excitation light, not the color of the emitted fluorescence.

Designation	Excitation	Emission
UV – Ultra Violet	360-380nm	415nm longpass
VI – Violet	400-415nm	460nm longpass
RB – Royal Blue	440-460nm	500nm longpass
RB-GO – Green Only	440-460nm	500-560nm bandpass
CY – Cyan	490-515nm	550nm longpass
GR – Green	510-540nm	600nm longpass

With the Royal Blue (RB) excitation we offer two barrier filters – longpass and bandpass. Read our article on selecting the right passband option for your application.

Note: Wavelength sets are named and color coded for the color of the excitation light, not the color of the emitted fluorescence.

Cat No.	Description	Qty.
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One-color complete setup

SFA-DL-UV	Ultraviolet (360 – 380nm) excitation	pair
SFA-DL-VI	Violet (400 – 415nm) excitation	pair
SFA-DL-RB	Royal Blue (440 – 460nm) excitation with longpass filter	pair
SFA-DL-RB-GO	Royal Blue with Green-Only bandpass filter	pair
SFA-DL-CY	Cyan (490 – 515nm) excitation	pair
SFA-DL-GR	Green (510 – 540nm) excitation	pair

Modular excitation/emission sets

SFA-DL-LFS-UV	Ultraviolet excitation	pair
SFA-DL-LFS-VI	Violet excitation	pair
SFA-DL-LFS-RB	Royal Blue excitation	pair
SFA-DL-LFS-RB-GO	Royal Blue excitation with Green-Only bandpass filter	pair
SFA-DL-LFS-CY	Cyan excitation	pair
SFA-DL-LFS-GR	Green excitation	pair