

Multi-Wavelength Imaging

## Features and Benefits

- **Single camera**  
Cost effective - only one camera required
- **Variable internal path separation**  
Minimizing the introduction of aberrations
- **Dichroic mirror and emission filters mounted in a readily interchangeable cube**  
Exchange filter sets both easily and quickly. Some competing products have factory fitted filters
- **Variable and locking rectangular diaphragm aperture for defining field size**  
Define the ROI both horizontally and vertically and set the images to the optimum size for the camera sensor
- **Compact design with integral C-mount input and output ports**  
Integral C-mounts allow it to be easily attached to a wide variety of standard microscopes and CCD cameras
- **Simple and precise controls for image registration**  
Split images can be accurately and easily centred in the desired field of view, and pixels aligned with respect to each other
- **Interchangeable filter/dichroic holders for triple, dual and single wavelength imaging**  
Flexibility to use multiple wavelengths by simply changing filter and re-sizing the defined field
- **Aperture diaphragms to balance signal levels if appropriate**  
Acts as an adjustable neutral density filter, which can be more convenient than using neutral density filters
- **Rotating filter mount for polarization studies**  
Accurately orientates the emission polarization to maximize the contrast

## Triple Emission Image Splitter

The Optosplit III, a 3-way image splitter is a simple device for dividing an image into one, two or three separate, spatially equivalent components which can be displayed side by side on a camera sensor, enabling a single camera to record images simultaneously at one, two or three different optical wavelengths.

The Optosplit III has been designed as a convenient, inexpensive solution for simultaneous imaging. Splitting is usually performed on the basis of wavelength or polarization, allowing applications where there is a requirement for simultaneous or high speed acquisition of multiple emission bands or polarization states. The simultaneous acquisition of up to three images offers a major benefit over manual or electronic filter changers, as there is no longer a need to pause acquisition while the filter position is changed. This allows your camera to be operated at the very fastest capture rates it is capable of achieving.

The Optosplit III is usually supplied with unity magnification and fitted with a rectangular aperture to define the ROI. It includes controls to allow up to three images to be positioned accurately and conveniently within the camera frame. Device drivers are included in several commercial imaging packages to assist registration and to allow real-time and off-line ratioing or image overlays. Whilst optimized for coupling to a scientific microscope, the Optosplit III can also be used with camera lenses or any other system of lenses that produce an image plane of suitable size.

## Key Applications

Polarization Fluorescence Resonance Energy Transfer (pFRET)

Ratiometric ion imaging

Triple fluorescence probe imaging

Polarization studies

Simultaneous phase contrast and fluorescence

Multi-depth imaging

## Creating The Optimum Product for You

How to customize the Optosplit III:

### Step 1.

Select the Optosplit III product code.

### Step 2.

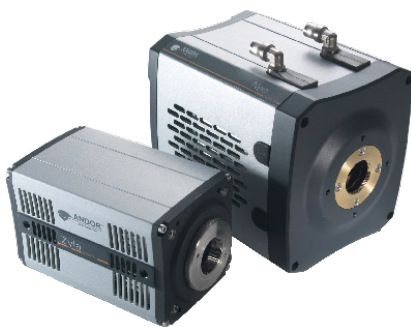
Please indicate the filter set you require.

### Step 3.

Please indicate which accessories are required.

#### Items shipped with your Optosplit III

- 1 x rectangular input diagram
- 1 x triple calibration cube
- 2 x shutter plates
- 1 x corrector lens & holder
- 1 x ND kit with 4 ND filters
- 1 x Filter Block for single channel operation (100 % through centre)
- 2 x Em/Ex empty cube



### Step 1.

Choose the Optosplit III using the following product code:

#### TR-OPTS-30B

1.0x magnification. TR-OPTS-30B suits the larger sensor size of the Zyla 4.2, Zyla 5.5, Neo 5.5 and iXon Ultra 888. This Optosplit III is suitable for all imaging cameras from Andor, 'one size fits all'.

### Step 2.

The following filter sets are available:

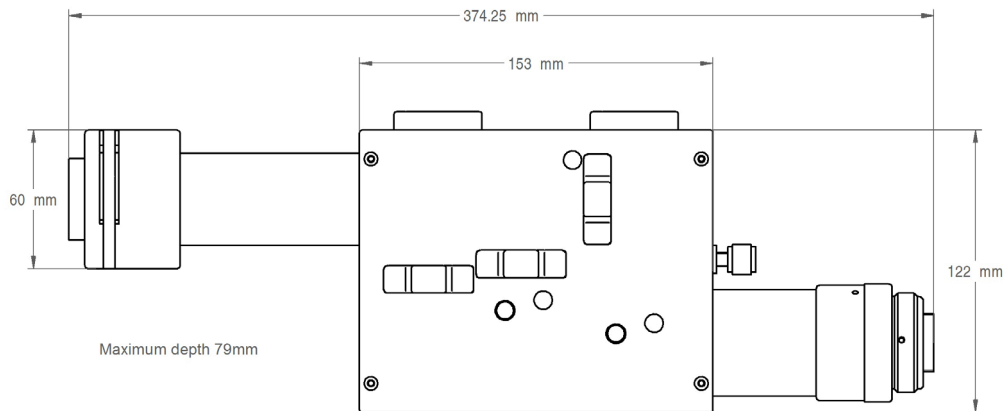
Part Code	Short Description	Long Description
TR-EMFS-F01	GFP/RFP	Semrock FF01-514/30-25, FF02-617/73, Dichroic FF580-FDi01-25x36
TR-EMFS-F02	CFP/YFP	Semrock FF01-475/28, FF01-550/49-25, Dichroic FF509-FDi01-25x36
TR-EMFS-F05	CAMELEONS	Semrock FF01-483/32-25, FF01-542/27-25, Dichroic FF506-Di02-25x36,
TR-EMFS-F07	GFP/YFP	Semrock FF01-497/16-25, FF01-550/32, Dichroic FF509-FDi01-25x36
TR-EMFS-F08	680/732 Filter Set	Semrock FF01-680/13-25, FF01-732/68-25, Dichroic FF700-Di01-25x36
TR-EMFS-F09	Cy3-Cy5	Semrock FF01-579/34-25, FF01-679/41-25, Dichroic FF640-FDi01-25x36
TR-EMFS-F10	Polarizing Filter set	Emission / excitation filter cube with integrated polarizing beamsplitter cube & Rotating Optosplit auxiliary component holder with 25mm polarizer (Full width)
TR-EMFS-F12	Cy3/Cy5.5	Semrock FF01-579/34-25, FF01-692/40-25, Dichroic FF640-FDi01-25x36
TR-EMFS-F13	Fluo4/Fura Red	Semrock FF01-530/43-25, Chroma HQ615LP, Dichroic FF580-FDi01-25x36
TR-EMFS-F14	GFP/Cy5	Semrock FF02-525/40, FF01-679/41-25, Dichroic FF580-FDi01-25x36
TR-EMFS-F15	50/50 BS Mirror	Chroma 50/50 beamsplitter, 25.2x35.6x1mm laser flat
TR-EMFS-F17	GFP/mCherry	Semrock FF02-525/40-25, FF01-640/40-25, Dichroic FF580-FDi01-25x36
TR-EMFS-F20	GFP/Cy5	Semrock FF01-534/42-25, FF01-655/40-25, Dichroic FF580-FDi01-25x36
TR-EMFS-F21	GFP/mCherry:wide	Semrock FF01-534/42-25, FF01-641/75-25, Dichroic FF580-FDi01-25x36

### Step 3.

The following accessories are available:

TR-OPTS-F00	Optosplit filter cube	Empty filter cube for Optosplit II/III
-------------	-----------------------	--

## Product Drawings



## Recommended Software

Device drivers are included in several commercial imaging packages to assist registration and to allow real-time and off-line ratioing or fluorescence overlays. Alternatively, the Optosplit can be used with simple image capture software and the processing carried out manually off-line.

The simple and accessible design makes the Optosplit an excellent platform for alternative applications, such as dual polarization imaging. Whilst optimized for coupling to a scientific microscope, the Optosplit can also be used with camera lenses or any other system of lenses that produce an image plane of suitable size.



μManager



## Order Today

Need more information? At Andor we are committed to finding the correct solution for you. With a dedicated team of technical advisors, we are able to offer you one-to-one guidance and technical support on all Andor products. For a full listing of our regional sales offices, please see [andor.com/contact](http://andor.com/contact)

Our regional headquarters are:

### Europe

Belfast, Northern Ireland  
Phone +44 (28) 9023 7126  
Fax +44 (28) 9031 0792

### North America

Connecticut, USA  
Phone +1 (860) 290 9211  
Fax +1 (860) 290 9566

### Japan

Tokyo  
Phone +81 (3) 6732 8968  
Fax +81 (3) 6732 8939

### China

Beijing  
Phone +86 (10) 8271 9066  
Fax +86 (10) 8271 9055

