

OPTOSPLIT III LS

DATASHEET

Three-way image splitter

NEW LARGE SENSOR VERSION

The Optosplit III triple image splitter from Cairn Research is a simple device for dividing an image into two, or three separate, spatially equivalent components which can be displayed side by side on a single camera chip.



Splitting is usually performed on the basis of wavelength and/or polarisation, allowing applications where there is a requirement for simultaneous, or high speed acquisition of multiple image emission bands or polarisation 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 in high speed stream modes and reduces demands on the software.

APPLICATIONS

- Triple fluorescence probe studies
- Polarisation Förster Resonance Energy Transfer (pFRET)
- Ratiometric ion imaging
- Polarisation studies
- Simultaneous phase contrast and fluorescence
- Multi-depth imaging

KEY BENEFITS

- Works with sensor sizes up to 22mm diagonal (eg 5.5 MPixel sCMOS)
- Dichroic mirror and emission filters mounted in readily interchangeable cubes for dual or triple emission separation
- Unity magnification fitted as standard, other options on request
- Simple intuitive alignment in x, y, and focal planes
- Interchangeable mount for N.D. filter or chromatic correction lens
- Bypass mode to allow single wavelength imaging using either pathway (18mm diagonal)
- C-mount coupling to microscope or camera lens
- Supports cropped sensor modes

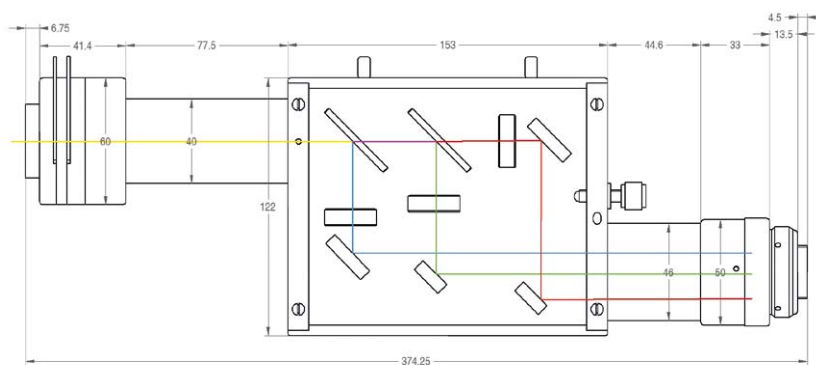


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Multidepth imaging

SUMMARY

In fluorescence imaging applications it is often useful to acquire simultaneous images at multiple emission wavelengths. Traditionally such applications have been restricted by the speed of an electronic filter changer, or by the cost and complexity of adding extra detection hardware. In many instances the region of interest does not require the full resolution of the camera so the ideal solution would be to simultaneously image at multiple wavelengths on the same camera chip. In conjunction with a research microscope and a suitable c-mount camera the Cairn OS III allows the researcher to do exactly this. The image splitter 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. Images can be acquired using any imaging software and processed either manually off-line or using an appropriate on-line analysis tool such as the Splitview module in Molecular Devices Meta series software; Field Split in Andor's iQ; or our Optosplit drop-in for ImageJ. The instrument is configured to attach to the c-mount output port of a research microscope, with a c-mount camera fitted to its output and its design allows for connection to a variety of alternative devices, so please consult with us if you intend using it in any other configuration.



Body options	
P280/310/0LS	Optosplit III 'LS' Triple emission image splitter (x1.0 magnification) includes rectangular input diaphragm, triple calibration cube & two shutter plates. Longer focal ratio lenses optimised for large format cameras up to 16mm x 16mm (e.g sCMOS sensors)
P280/310/MLS	Optosplit III 'LS' Triple emission image splitter (x1.0 magnification) includes OptoMask input diaphragm, triple calibration cube & two shutter plates. Longer focal ratio lenses optimised for large format cameras up to 16mm x 16mm (e.g sCMOS sensors)
P280/3xx/0LS	Optosplit III 'LS' Triple emission image splitter (custom magnification) includes rectangular input diaphragm, triple calibration cube & two shutter plates. Longer focal ratio lenses optimised for large format cameras up to 16mm x 16mm (e.g sCMOS sensors)
P280/3xx/MLS	Optosplit III 'LS' Triple emission image splitter (custom magnification) includes OptoMask input diaphragm, triple calibration cube & two shutter plates. Longer focal ratio lenses optimised for large format cameras up to 16mm x 16mm (e.g sCMOS sensors)
Accessories	
P290/000/200	Cairn emission / excitation filter cube for 25mm filters (Empty)
P290/BYP/002	Cairn emission filter block for single channel operation (100% through centre channel)
P290/CR3/012	Optosplit III corrector lens kit (Includes 2 full width component holders)
P290/ND3/006	Optosplit III neutral density kit (Includes 2 half width component holders and 4 ND filters)
P290/POL/001	Cairn emission / excitation filter cube with integrated polarising beamsplitter cube
P290/POL/002	Rotating Optosplit auxiliary component holder with 25mm polariser (Full width)
P290/AUX/012	Auxiliary component holder for 25mm filters, lenses or apertures for OptoSplit and microscope couplings (full width)