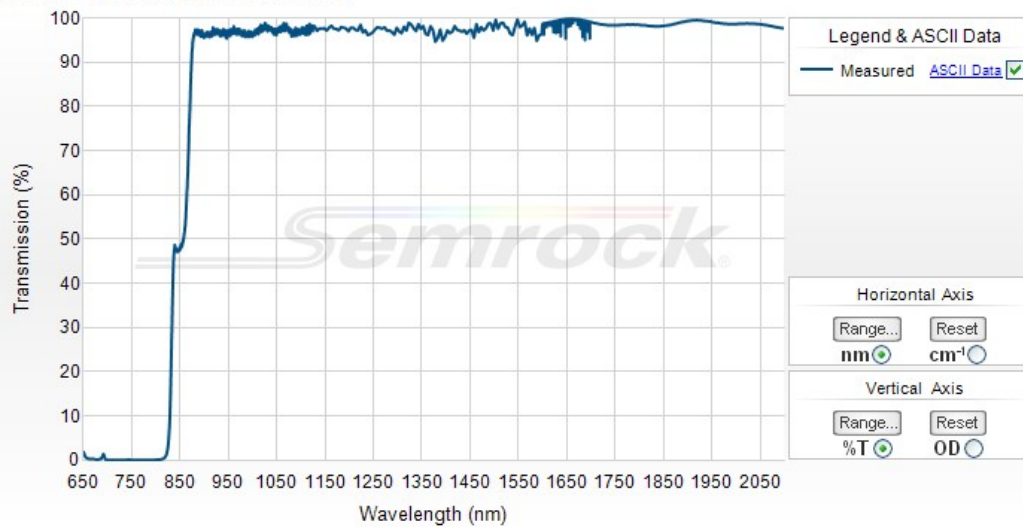


## 850 nm BrightLine® Multiphoton LaserMUX™ Beam Combiner

Part Number: FF850-Di01-t1-25x36



### Semrock, Inc

3625 Buffalo Road, Suite 6  
Rochester, New York 14624

Main Phone: +1 585.594.7050 (worldwide)  
Toll Free Phone: 866.736.7625 (866-SEMROCK)  
(within US and Canada)

Your filter spectrum may differ slightly from the typical spectrum above, but is certified to meet the optical specifications noted below.



### 850 nm BrightLine® Multiphoton LaserMUX™ Beam Combiner

Multiphoton LaserMUX™ beam combiners enable deeper tissue imaging and improved contrast in multi-color and multi-modal fluorescence microscopy. The filters set new performance standards by simultaneously achieving high transmission, high reflection, and low GDD over both reflection & transmission, while maintaining minimal wavefront distortion. Ideal for combining two femtosecond pulsed laser beams, they are perfect for optogenetics and other life science applications.

Combine two or more femtosecond pulsed lasers such as Ti:Sapphire (& OPO coupled), neodymium and ytterbium-doped fiber and glass lasers, and Cr-forsterite lasers.

- < 1λ P-V RWE on 1 mm
- < λ/10 P-V Transmitted Wavefront Error
- < ± 100 fs<sup>2</sup> Group Delay Dispersion over popular femtosecond laser wavelengths

Part Number	Size	Price <sup>1</sup>	Stock Status
FF850-Di01-t1-25x36	<b>New Product</b> 25.2 mm x 35.6 mm x 1.1 mm (unmounted)	\$745	2nd Day Ship

This part is not available for custom sizing - [contact us](mailto:semrock@idexcorp.com) (semrock@idexcorp.com) for 50.8mm sizes

1) US domestic pricing only. If you are ordering from outside the US, please contact your nearest [regional distributor](#) for the correct list price.

### Optical Specifications

Specification	Value
Reflection Band 1	R <sub>avg</sub> > 95% 670 – 815 nm over any 10 nm window
Reflection Band 1 (p-pol)	R <sub>avg</sub> > 90% 670 – 815 nm
Reflection Band 1 (s-pol)	R <sub>avg</sub> > 98% 670 – 849 nm
Edge Wavelength 1	850 nm
Transmission Band 1	T <sub>avg</sub> > 93% 890 – 2100 nm over any 10 nm window
Transmission Band 1 (p-pol)	T <sub>avg</sub> > 95% 845 – 2100 nm
Transmission Band 1 (s-pol)	T <sub>avg</sub> > 90% 890 – 2100 nm
Laser Wavelengths 1	

### General Filter Specifications

Specification	Value
Angle of Incidence	45 ± 1.5 degrees
Cone Half-angle	1.5 degrees
Optical Damage Rating	50 mJ/cm <sup>2</sup> @ 800 nm (50 fs pulse width); test pending; specification based on FS01 Mirror test results
Flatness (1 mm thickness)	1λ P-V RWE @ 632.8 nm
Flatness (3 mm thickness)	λ/5 P-V RWE @ 632.8 nm
Transmitted Wavefront Error	λ/10 PV over CA @ 632.8 nm
Steepness	Standard
Effective Index	1.7
Group Delay Dispersion Reflection (p-pol)	± 100 fs <sup>2</sup> over 691 - 795 nm

Group Delay Dispersion Reflection (p-pol)	± 500 fs <sup>2</sup> over 683 - 812 nm
Group Delay Dispersion Reflection (s-pol)	± 100 fs <sup>2</sup> over 670 - 828 nm ± 500 fs <sup>2</sup> over 670 - 840 nm
Group Delay Dispersion Transmission (p-pol)	± 100 fs <sup>2</sup> over 917 - 2050 nm (excluding substrate, by design) ± 500 fs <sup>2</sup> over 873 - 2100 nm (excluding substrate, by design)
Group Delay Dispersion Transmission (s-pol)	± 100 fs <sup>2</sup> over 965 - 2050 nm (excluding substrate, by design) ± 500 fs <sup>2</sup> over 913 - 2100 nm (excluding substrate, by design)

**Physical Filter Specifications (applies to standard sized parts; contact us regarding other sizes)**

Specification	Value
Transverse Dimensions (L x W)	25.2 mm x 35.6 mm
Transverse Tolerance	± 0.1 mm
Filter Thickness (1 mm, unmounted)	1.05 mm
Filter Thickness Tolerance (1 mm, unmounted)	± 0.05 mm
Filter Thickness (3 mm, unmounted)	3.0 mm
Filter Thickness Tolerance (3 mm, unmounted)	± 0.1 mm
Clear Aperture	≥ 85% (elliptical)
Scratch-Dig	60-40
Substrate Type	Fused Silica
Substrate Thickness (1 mm, unmounted)	1.05 mm
Substrate Thickness Tolerance (1 mm, unmounted)	± 0.05 mm
Substrate Thickness (3 mm, unmounted)	3.0 mm
Substrate Thickness Tolerance (3 mm, unmounted)	± 0.1 mm
Orientation	Reflective surface marked with laser dot - Orient in direction of incoming light