



**Semrock, Inc**

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Rochester, New York 14624

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Toll Free Phone: 866.736.7625 (866-SEMROCK)  
(within US and Canada)

**BrightLine® Pinkel filter set, optimized for DAPI, FITC, TRITC, & Cy5 and other like fluorophores, illuminated with LED-based light engines**

Semrock's LED-based light engine filter sets are designed to use common excitation filters between single-band and corresponding multiband configurations to simplify interchangeability when installing the excitation filters into the light engine. This not only provides seamless transition between using single-band and multiband filter sets but also provides significant cost savings.

This 6-filter "Pinkel" quad-band set is designed for imaging of a sample that is simultaneously labeled with DAPI, FITC, TRITC, and Cy5 (or other key fluorophores – see complete list above). This set has been designed to deliver significant fluorescence signal improvements for LED-based light engines compared with traditional sets designed for standard broadband light sources such as mercury or xenon arc lamps. The complete set is comprised of a quad-band beamsplitter and a quad-band emitter (these can be offered assembled in a microscope cube), plus four "no burn-out" single-band exciters that are intended to be mounted in the LED-based light engines, or in an exciter filter wheel or slider.

Interested in learning how this filter set will perform with your light source? Try Semrock's [SearchLight](#) plotting & calculation tool.

**Individual filters and filter sets (no cube):**

These filters sets contain individual filters. For filter sets already mounted in a holder/cube, scroll down to see complete mounted sets with cubes.

Part Number	Price <sup>1</sup>	Stock Status																																
<input checked="" type="checkbox"/> LED-DA/FI/TR/Cy5-4X-A-000 (Standard size set, fits most microscopes)	\$2,045	In Stock																																
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Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-392/23-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-635/18-25</a>	\$305
Quad Band Emitter	23.3 mm x 2.0 mm	<a href="#">FF01-432/515/595/730-23.3-D</a>	\$495
Quad Band Dichroic	22.0 mm x 29.0 mm x 1.1 mm	<a href="#">FF409/493/573/652-Di01-22x29</a>	\$515

LED-DA/FI/TR/Cy5-4X-A-L01-ZERO (Leica 'Large' -ZERO pixel set) \$2,144 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-392/23-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/27-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-554/23-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-635/18-25</a>	\$305
Quad Band Emitter	23.3 mm x 2.0 mm	<a href="#">FF01-432/515/595/730-23.3-D</a>	\$495
Quad Band Dichroic	22.0 mm x 29.0 mm x 1.1 mm	<a href="#">FF409/493/573/652-Di01-22x29</a>	\$515
-ZERO set certification		<a href="#">-ZERO</a>	\$99

LED-DA/FI/TR/Cy5-4X-A-L02 (Leica 'Small' set) \$2,299 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-392/23-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/27-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-554/23-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-635/18-25</a>	\$305

LED-DA/FI/TR/Cy5-4X-A-000-X32 (Standard size set, fits most microscopes) \$2,697 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
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LED-DA/FI/TR/Cy5-4X-A-L01-X32 (Leica 'Large' set) \$2,697 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
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LED-DA/FI/TR/Cy5-4X-A-L02-X32 (Leica 'Small' set) \$2,997 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
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\$2,125 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm threaded ring for Sutter Lambda filter wheel	<a href="#">FF01-392/23-25-STR</a>	\$375
Single Band Exciter	25 mm threaded ring for Sutter Lambda filter wheel	<a href="#">FF01-474/27-25-STR</a>	\$375
Single Band Exciter	25 mm threaded ring for Sutter Lambda filter wheel	<a href="#">FF01-554/23-25-STR</a>	\$325
Single Band Exciter	25 mm threaded ring for Sutter Lambda filter wheel	<a href="#">FF01-635/18-25-STR</a>	\$325
Quad Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-432/515/595/730-25</a>	\$495
Quad Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF409/493/573/652-Di01-25x36</a>	\$515

\$2,224 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm threaded ring for Sutter Lambda filter wheel	<a href="#">FF01-392/23-25-STR</a>	\$375
Single Band Exciter	25 mm threaded ring for Sutter Lambda filter wheel	<a href="#">FF01-474/27-25-STR</a>	\$375
Single Band Exciter	25 mm threaded ring for Sutter Lambda filter wheel	<a href="#">FF01-554/23-25-STR</a>	\$325
Single Band Exciter	25 mm threaded ring for Sutter Lambda filter wheel	<a href="#">FF01-635/18-25-STR</a>	\$325
Quad Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-432/515/595/730-25</a>	\$495
Quad Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF409/493/573/652-Di01-25x36</a>	\$515
-ZERO set certification		<a href="#">-ZERO</a>	\$99

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

**Complete filter sets mounted in microscope holders/cubes:**

These sets are delivered already mounted in microscope filter holders, often called 'cubes', ready to be dropped into your microscope.



**Nikon Quadfluor** for microscopes: E200, E400, E600, E800, E1000, TS100, TS100F, TE200, TE300, ME600L, L150A, and some Labophot, Optiphot, and Diaphot series

LED-DA/FI/TR/Cy5-4X-A-NQF (set mounted in cube) \$2,440 In Stock

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-392/23-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/27-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-554/23-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-635/18-25</a>	\$305
Quad Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-432/515/595/730-25</a>	\$495
Quad Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF409/493/573/652-Di01-25x36</a>	\$515
Quadfluor cube		<a href="#">NQF</a>	\$395

LED-DA/FI/TR/Cy5-4X-A-NQF-ZERO (-ZERO pixel set mounted in cube) \$2,539 Contact Us

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-392/23-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/27-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-554/23-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-635/18-25</a>	\$305
Quad Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-432/515/595/730-25</a>	\$495
Quad Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF409/493/573/652-Di01-25x36</a>	\$515
Quadfluor cube		<a href="#">NQF</a>	\$395
-ZERO set certification		<a href="#">-ZERO</a>	\$99

LED-DA/FI/TR/Cy5-4X-A-NQF-X32 (set mounted in cube) \$3,082 Contact Us

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Quadfluor cube		<a href="#">NQF</a>	\$395

**Nikon TE 2000** for microscopes: TE 2000, 50i, 55i, 80i, 90i, Eclipse Ti, Ni, and Ci series, and any using the Epi-fluor Illuminator

LED-DA/FI/TR/Cy5-4X-A-NTE (set mounted in cube) \$2,440 In Stock

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-392/23-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/27-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-554/23-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-635/18-25</a>	\$305
Quad Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-432/515/595/730-25</a>	\$495
Quad Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF409/493/573/652-Di01-25x36</a>	\$515
TE 2000 cube		<a href="#">NTE</a>	\$395

LED-DA/FI/TR/Cy5-4X-A-NTE-ZERO (-ZERO pixel set mounted in cube) \$2,539 Contact Us

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-392/23-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/27-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-554/23-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-635/18-25</a>	\$305
Quad Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-432/515/595/730-25</a>	\$495
Quad Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF409/493/573/652-Di01-25x36</a>	\$515
TE 2000 cube		<a href="#">NTE</a>	\$395
-ZERO set certification		<a href="#">-ZERO</a>	\$99

LED-DA/FI/TR/Cy5-4X-A-NTE-X32 (set mounted in cube) \$3,082 Contact Us

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
TE 2000 cube		<a href="#">NTE</a>	\$395

**Olympus U-MF2** for microscopes: AX70, BX, BX41, BX50, BX51, BX60, BX61, BX50/51WI, BX60/61WI, IX50, IX51, IX70, IX71, IX81

LED-DA/FI/TR/Cy5-4X-A-OMF (set mounted in cube) \$2,480 In Stock

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-392/23-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/27-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-554/23-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-635/18-25</a>	\$305
Quad Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-432/515/595/730-25</a>	\$495
		<a href="#">FF409/493/573/652-Di01</a>	

Quad Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF409/493/573/652-Di01-25x36</a>	\$515
U-MF2 cube		<a href="#">OMF</a>	\$435

LED-DA/FI/TR/Cy5-4X-A-OMF-ZERO (-ZERO pixel set mounted in cube) \$2,579 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-392/23-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/27-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-554/23-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-635/18-25</a>	\$305
Quad Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-432/515/595/730-25</a>	\$495
Quad Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF409/493/573/652-Di01-25x36</a>	\$515
U-MF2 cube		<a href="#">OMF</a>	\$435
-ZERO set certification		<a href="#">-ZERO</a>	\$99

LED-DA/FI/TR/Cy5-4X-A-OMF-X32 (set mounted in cube) \$3,117 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
U-MF2 cube		<a href="#">OMF</a>	\$435

### Olympus U-FF for microscopes: BX53, BX63

LED-DA/FI/TR/Cy5-4X-A-OFF (set mounted in cube) \$2,480 [In Stock](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-392/23-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/27-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-554/23-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-635/18-25</a>	\$305
Quad Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-432/515/595/730-25</a>	\$495
Quad Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF409/493/573/652-Di01-25x36</a>	\$515
U-FF cube		<a href="#">OFF</a>	\$435

LED-DA/FI/TR/Cy5-4X-A-OFF-ZERO (-ZERO pixel set mounted in cube) \$2,579 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-392/23-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/27-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-554/23-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-635/18-25</a>	\$305
Quad Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-432/515/595/730-25</a>	\$495
Quad Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF409/493/573/652-Di01-25x36</a>	\$515
U-FF cube		<a href="#">OFF</a>	\$435
-ZERO set certification		<a href="#">-ZERO</a>	\$99

LED-DA/FI/TR/Cy5-4X-A-OFF-X32 (set mounted in cube) \$3,117 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
U-FF cube		<a href="#">OFF</a>	\$435

### Zeiss FL Cube EC P+C for microscopes: Axio Imager, AxioStar Plus, Axioskop 40, Axioskop 2 (post-2001), Axioplan 2i, Axioplan 2ie, Axiovert 200, Axiovert 40, Axio Observer, Axio Examiner and Axio Scope A1

LED-DA/FI/TR/Cy5-4X-A-ZHE (set mounted in cube) \$2,320 [In Stock](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-392/23-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/27-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-554/23-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-635/18-25</a>	\$305
Quad Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-432/515/595/730-25</a>	\$495
Quad Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF409/493/573/652-Di01-25x36</a>	\$515
FL Cube EC P+C cube		<a href="#">ZHE</a>	\$275

LED-DA/FI/TR/Cy5-4X-A-ZHE-ZERO (-ZERO pixel set mounted in cube) \$2,419 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-392/23-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/27-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-554/23-25</a>	\$305



Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-635/18-25</a>	\$305
Quad Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-432/515/595/730-25</a>	\$495
Quad Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF409/493/573/652-Di01-25x36</a>	\$515
FL Cube EC P+C cube		<a href="#">ZHE</a>	\$275
-ZERO set certification		<a href="#">-ZERO</a>	\$99

LED-DA/FI/TR/Cy5-4X-A-ZHE-X32 (set mounted in cube) \$3,022 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
FL Cube EC P+C cube		<a href="#">ZHE</a>	\$275

#### Leica DM-K for microscopes: DM-2000, DM-2500, DM-3000, DMI3000 B, DM-4000, DMI4000 B, DM-5000, DM-5500, and DM-6000, DMI6000 B

LED-DA/FI/TR/Cy5-4X-A-LDMK (set mounted in cube) \$2,395 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-392/23-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/27-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-554/23-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-635/18-25</a>	\$305
Quad Band Emitter	23.3 mm x 2.0 mm	<a href="#">FF01-432/515/595/730-23.3-D</a>	\$495
Quad Band Dichroic	22.0 mm x 29.0 mm x 1.1 mm	<a href="#">FF409/493/573/652-Di01-22x29</a>	\$515
DM-K cube		<a href="#">LDMK</a>	\$350

LED-DA/FI/TR/Cy5-4X-A-LDMK-ZERO (-ZERO pixel set mounted in cube) \$2,494 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-392/23-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/27-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-554/23-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-635/18-25</a>	\$305
Quad Band Emitter	23.3 mm x 2.0 mm	<a href="#">FF01-432/515/595/730-23.3-D</a>	\$495
Quad Band Dichroic	22.0 mm x 29.0 mm x 1.1 mm	<a href="#">FF409/493/573/652-Di01-22x29</a>	\$515
DM-K cube		<a href="#">LDMK</a>	\$350
-ZERO set certification		<a href="#">-ZERO</a>	\$99

LED-DA/FI/TR/Cy5-4X-A-LDMK-X32 (set mounted in cube) \$3,117 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
DM-K cube		<a href="#">LDMK</a>	\$350

#### Leica DMI8 (P-Cube) for microscopes: DMI8

LED-DA/FI/TR/Cy5-4X-A-LDMP-ZERO (-ZERO pixel set mounted in cube) \$2,579 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-392/23-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/27-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-554/23-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-635/18-25</a>	\$305
Quad Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-432/515/595/730-25</a>	\$495
Quad Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF409/493/573/652-Di01-25x36</a>	\$515
DMI8 (P-Cube) cube		<a href="#">LDMP</a>	\$435
-ZERO set certification		<a href="#">-ZERO</a>	\$99

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
Blocking	BrightLine filters have blocking far exceeding OD 6 as needed to ensure a black background, even when using modern low-noise CCD cameras. The blocking is optimized for microscopy applications using our exclusive SpecMaker™ fluorescence filter design.

#### General Filter Specifications

Specification	Value
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Microscope Compatibility	BrightLine filters are available to fit Leica, Nikon, Olympus, Zeiss, and Apero microscopes.
Optical Damage Rating	Testing has proven to show no signs of degradation when exposed to at least 6.0 W of power from an unfiltered xenon arc lamp over a 25 mm diameter (corresponding to 1.2 W/cm <sup>2</sup> ) for over 500 hours.

### Physical Filter Specifications

Specification	Value
Scratch-Dig	60-40
Exciter/Emitter Orientation	Arrow on ring indicates preferred direction of propagation of light.
Dichroic Orientation	"Reflective coating side" should face toward light source and sample.

### Fluorophore Compatibility

★★★★ indicates this filter set was specifically optimized for this fluorophore.

★★★ indicates an excellent spectral match between fluorophore and filter set that should result in nearly ideal performance in most situations.

★★ indicates a good match between fluorophore and filter set, with actual performance dependent on other experimental conditions.

#### Blue

Fluorophore	Compatibility
Alexa Fluor® 405	★★★★
BD Horizon V450	★★★
BFP (EBFP)	★★★★
Cascade Blue™	★★★★
CellTrace calcein violet	★★
DAPI	★★★★
DyLight 405	★★★★
HiLyte Fluor™ 405	★★★★
LIVE-DEAD Fixable Violet Dead Cell Stain	★★
LysoSensor Blue	★★★
Marina Blue	★★
Pacific Blue™	★★
sgBFP™	★★★★
SpectrumBlue	★★★
TagBFP	★★
Vybrant DyeCycle Violet	★★

★★★★ indicates this filter set was specifically optimized for this fluorophore.

★★★ indicates an excellent spectral match between fluorophore and filter set that should result in nearly ideal performance in most situations.

★★ indicates a good match between fluorophore and filter set, with actual performance dependent on other experimental conditions.

#### Green

Fluorophore	Compatibility
5-FAM (5-carboxyfluorescein)	★★★
Acridine Orange (+DNA)	★★
Acridine Yellow	★★
Alexa Fluor® 430	★★
Alexa Fluor® 488	★★★★
Alexa Fluor® 500	★★
AmCyan1	★★★
ATTO 465	★★
ATTO 488	★★★★
ATTO 495	★★
BOBO™-1	★★
BODIPY FL	★★
BODIPY FL-MeOH	★★
Calcein	★★★
CFP2	★★★★
Cy2™	★★★★
CyQUANT GR-DNA	★★
DAF-FM-NO	★★
Dendra2 (Green)	★★★★
DiO	★★★★

Dronpa	☆☆
DY-505-Phalloidin	☆☆
<b>ecliptic pHLuorin pH5.5</b>	☆☆☆☆
Emerald	☆☆☆
evoglow-Bs1	☆☆
<b>FITC (Fluorescein)</b>	☆☆☆☆
Fluo-4	☆☆☆
Fluorescein dextran	☆☆
Fluorescein-pH 8.0	☆☆
Fluoro-Emerald	☆☆
FluoSpheres Yellow-Green fluorescent microspheres	☆☆
<b>GFP (EGFP)</b>	☆☆☆☆
Green 496	☆☆
Green 500	☆☆
HiLyte Fluor™ 488	☆☆
LIVE-DEAD Fixable Green Dead Cell Stain	☆☆
LysoSensor Green	☆☆
LysoTracker Green	☆☆
LysoTracker Yellow HCK-123	☆☆
mHoneyDew	☆☆
MitoTracker™ Green	☆☆☆
mTFP1	☆☆
mWasabi	☆☆☆
NBD-X (MeOH)	☆☆
NeuroTrace 500/525 Green Fluorescent Nissl Stain	☆☆
Oregon Green™ 488	☆☆
PicoGreen	☆☆
PKH67	☆☆☆
Qdot® 525 Nanocrystals	☆☆
Rhodamine 110	☆☆
Rhodamine Green	☆☆
Rhodol Green	☆☆
<b>sgGFP™ (super glow GFP)</b>	☆☆☆☆
Sodium Green	☆☆
SpectrumGreen	☆☆
SYBR Gold nucleic acid gel stain-DNA	☆☆
SYBR Green I nucleic acid gel stain-DNA	☆☆
SYBR Safe DNA gel stain-DNA	☆☆
SYTO 11	☆☆
SYTO 13	☆☆☆
<b>SYTO 16</b>	☆☆☆☆
<b>SYTO 9</b>	☆☆☆☆
SYTO RNASelect geen fluorescent cell stain	☆☆
SYTOX Green-DNA	☆☆
TagCFP	☆☆
TOTO-1	☆☆
<b>TurboGFP</b>	☆☆☆☆
<b>wtGFP (wild type GFP, non-UV excitation)</b>	☆☆☆☆
YO-PRO-1	☆☆☆
YOYO-1	☆☆☆

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☆☆☆ indicates an excellent spectral match between fluorophore and filter set that should result in nearly ideal performance in most situations.

☆☆ indicates a good match between fluorophore and filter set, with actual performance dependent on other experimental conditions.

## Orange

Fluorophore	Compatibility
2-dodecylresorufin-lipid	☆☆☆



5-ROX (carboxy-X-rhodamine)	☆☆
5-TAMRA (5-carboxytetramethylrhodamine, pH 7.0)	☆☆☆
Alexa Fluor® 546	☆☆☆
Alexa Fluor® 555	☆☆
Alexa Fluor® 568	☆☆☆
Amplex UltraRed peroxidation product-pH 7.5	☆☆☆
AsRed 2	☆☆
ATTO 550	☆☆☆
<b>ATTO 565</b>	☆☆☆☆
BOBO™-3	☆☆☆
BODIPY TMR-X	☆☆
BODIPY TR-X (MeOH)	☆☆
Calcium Crimson	☆☆
Calcium Orange	☆☆☆
CellTracker Red CMTPX	☆☆
Cy3.5™	☆☆
Cy3™	☆☆
Dendra2 (Red)	☆☆
Dil	☆☆
<b>DsRed</b>	☆☆☆☆
<b>DsRed-Express</b>	☆☆☆☆
<b>dTomato</b>	☆☆☆☆
DY-590	☆☆
Ethidium bromide	☆☆
Ethidium homodimer	☆☆
FluoSpheres Red fluorescent microspheres	☆☆
Gold 550	☆☆
HCS LipidTOX Red neutral lipid stain	☆☆
HCS LipidTOX Red phospholipidosis	☆☆
HiLyte Fluor™ 555	☆☆
KFP-Red	☆☆
LOLO-1	☆☆☆
Lysotracker Red	☆☆
Magnesium Orange	☆☆☆
<b>mApple</b>	☆☆☆☆
mCherry	☆☆
Merocyanine 540	☆☆☆
MitoTracker™ Orange	☆☆☆
MitoTracker™ Red	☆☆
mOrange	☆☆
<b>mRFP</b>	☆☆☆☆
mRFP1	☆☆
<b>mRuby</b>	☆☆☆☆
mStrawberry	☆☆
<b>mTangerine</b>	☆☆☆☆
Nile red-triglyceride	☆☆
OFP	☆☆
<b>pHrodo™, succinimidyl ester</b>	☆☆☆☆
POPO-3	☆☆
PO-PRO-3	☆☆
Propidium Iodide (PI)	☆☆
<b>Pro-Q Diamond</b>	☆☆☆☆
Qdot® 585 Nanocrystals	☆☆
Qdot® 605 Nanocrystals	☆☆
ReAsH-CCPGCC	☆☆
Red 580	☆☆
Resorufin	☆☆☆
Rhod-2	☆☆☆
Rhodamine phalloidin	☆☆☆



Rhodamine Red-X	☆☆
R-phycoerythrin	☆☆☆
<b>SNARF-1 488nm (ph 6.0)</b>	☆☆☆☆
SNARF-1 488nm (ph 9.0)	☆☆
<b>SNARF-1 514nm (ph 6.0)</b>	☆☆☆☆
<b>SpectrumOrange</b>	☆☆☆☆
Sulforhodamine 101-EtOH	☆☆
SYTO 82	☆☆
SYTOX Orange	☆☆
<b>Tetramethylrhodamine dextran</b>	☆☆☆☆
Texas Red DHPE	☆☆
<b>TRITC (Tetramethylrhodamine)</b>	☆☆☆☆
TurboRFP	☆☆
X-Rhod-1 Indicator	☆☆

☆☆☆☆ indicates this filter set was specifically optimized for this fluorophore.

☆☆☆ indicates an excellent spectral match between fluorophore and filter set that should result in nearly ideal performance in most situations.

☆☆ indicates a good match between fluorophore and filter set, with actual performance dependent on other experimental conditions.

## Red

Fluorophore	Compatibility
5-carboxynaphthofluorescein (pH 10)	☆☆
Alexa Fluor® 633	☆☆☆
<b>Alexa Fluor® 647</b>	☆☆☆☆
Alexa Fluor® 660	☆☆
Alexa Fluor® 680	☆☆
Alexa Fluor® 700	☆☆
APC	☆☆☆
<b>APC (Allophycocyanin)</b>	☆☆☆☆
ATTO 633	☆☆☆
ATTO 635	☆☆☆
<b>ATTO 647</b>	☆☆☆☆
ATTO 647N	☆☆☆
ATTO 655	☆☆
ATTO 680	☆☆
ATTO 700	☆☆
<b>BODIPY 650/665-X</b>	☆☆☆☆
Carboxynaphthofluorescein	☆☆
Cy5.5™	☆☆
<b>Cy5™</b>	☆☆☆☆
<b>DDAO</b>	☆☆☆☆
<b>DiD (DiIc18(5)) - Lipophilic Tracer</b>	☆☆☆☆
DyLight 649	☆☆☆
DyLight 680	☆☆
FluoSpheres Dark Red fluorescent microspheres	☆☆
HCS CellMask Red cytoplasmic	☆☆
HCS LipidTOX Deep Red neutral lipid stain	☆☆
<b>HiLyte Fluor™ 647</b>	☆☆☆☆
LDS 751	☆☆
LIVE-DEAD Fixable Far Red Dead Cell Stain	☆☆
<b>MitoTracker™ Deep Red</b>	☆☆☆☆
<b>Nile blue-EtOH</b>	☆☆☆☆
Qdot® 705 Nanocrystals	☆☆
Qdot® 800 Nanocrystals	☆☆
Quasa 705	☆☆
<b>Red 650</b>	☆☆☆☆
<b>SpectrumFRed (Far Red)</b>	☆☆☆☆
SYTO 59	☆☆
SYTO 60	☆☆

SYTO 61	☆☆
SYTOX Red-DNA	☆☆☆☆
TO-PRO-3	☆☆☆
TOTO-3	☆☆☆☆

## Technical Information

Topic	Description
<a href="#">High Performance Microscopy</a>	An overview of high performance microscopy, including solutions from Semrock and additional learning resources.
<a href="#">Spectral Modeling in Fluorescence Microscopy</a>	Discusses various sources of noise in fluorescence microscopy and how to maximize signal-to-noise ratios using software, sample preparation and optical filter selection
<a href="#">New Optical Filters Improve High-Speed Multicolor Fluorescence Imaging</a>	Turan Erdogan, PhD, Semrock Inc., BioPhotonics, March 2006 Compares benefits and drawbacks of full multiband, pinkel and sedat filter sets for high-speed multicolor fluorescence imaging
<a href="#">Multiband Filter Set Terminology</a>	Compares benefits and drawbacks of full multiband, pinkel and sedat filter sets
<a href="#">Orientation of Filters in a Microscope</a>	A guide to properly orienting Semrock filters based on the filter markings.
<a href="#">Introduction to Fluorescence Filters</a>	Shows how optical filters are used in a traditional fluorescence microscope and describes important factors to consider when choosing optical filters.
<a href="#">Filter Reliability</a>	Compares the performance and reliability of hard coated filters to traditional soft-coated filters and provides information about the testing standards for Semrock filters
<a href="#">Cube Assembly Instructions</a>	PDF and video instruction for installing filters into popular filter cubes
<a href="#">Cleaning Optical Filters</a>	Instructions for cleaning hard coated optical filters