



**Semrock, Inc**

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(within US and Canada)

**BrightLine® Pinkel filter set, optimized for CFP, YFP, & mCherry and other like fluorophores, illuminated with LED-based light sources**

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 5-filter "Pinkel" triple-band set is designed for imaging of a sample that is simultaneously labeled with CFP, YFP, and mCherry, (or other key fluorophores – see complete list above). This set has been designed to deliver significant fluorescence signal improvements for LED-based light sources compared with traditional sets designed for standard broadband light sources such as mercury or xenon arc lamps. The complete set is comprised of a triple-band beamsplitter and a triple-band emitter (these can be offered assembled in a microscope cube), plus three "no burn-out" single-band exciters that are intended to be mounted in the LED based light source, 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-CFP/YFP/mCherry-3X-A-000 (Standard size set, fits most microscopes)	\$1,565	In Stock	
<b>Filter Role</b>	<b>Filter Size</b>	<b>Part Number</b>	<b>Price<sup>1</sup></b>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF02-438/24-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-509/22-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-578/21-25</a>	\$355
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-475/543/702-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-25x36</a>	\$435
<input checked="" type="checkbox"/> LED-CFP/YFP/mCherry-3X-A-000-ZERO (Standard size -ZERO pixel set)	\$1,664	In Stock	
<b>Filter Role</b>	<b>Filter Size</b>	<b>Part Number</b>	<b>Price<sup>1</sup></b>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF02-438/24-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-509/22-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-578/21-25</a>	\$355
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-475/543/702-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-25x36</a>	\$435
-ZERO set certification		<a href="#">-ZERO</a>	\$99
<input checked="" type="checkbox"/> LED-CFP/YFP/mCherry-3X-A-L01 (Leica 'Large' set)	\$1,565	Contact Us	
<b>Filter Role</b>	<b>Filter Size</b>	<b>Part Number</b>	<b>Price<sup>1</sup></b>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF02-438/24-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-509/22-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-578/21-25</a>	\$355
Triple Band Emitter	23.3 mm x 2.0 mm	<a href="#">FF01-475/543/702-23 3-D</a>	\$435
Triple Band Dichroic	22.0 mm x 29.0 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-22x29</a>	\$435

LED-CFP/YFP/mCherry-3X-A-L01-ZERO (Leica 'Large' -ZERO pixel set) \$1,664 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF02-438/24-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-509/22-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-578/21-25</a>	\$355
Triple Band Emitter	23.3 mm x 2.0 mm	<a href="#">FF01-475/543/702-23 3-D</a>	\$435
Triple Band Dichroic	22.0 mm x 29.0 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-22x29</a>	\$435
-ZERO set certification		<a href="#">-ZERO</a>	\$99

LED-CFP/YFP/mCherry-3X-A-L02 (Leica 'Small' set) \$1,829 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF02-438/24-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-509/22-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-578/21-25</a>	\$355

\$1,625 [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="#">FF02-438/24-25-STR</a>	\$325
Single Band Exciter	25 mm threaded ring for Sutter Lambda filter wheel	<a href="#">FF01-509/22-25-STR</a>	\$375
Single Band Exciter	25 mm threaded ring for Sutter Lambda filter wheel	<a href="#">FF01-578/21-25-STR</a>	\$375
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-475/543/702-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-25x36</a>	\$435

\$1,724 [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="#">FF02-438/24-25-STR</a>	\$325
Single Band Exciter	25 mm threaded ring for Sutter Lambda filter wheel	<a href="#">FF01-509/22-25-STR</a>	\$375
Single Band Exciter	25 mm threaded ring for Sutter Lambda filter wheel	<a href="#">FF01-578/21-25-STR</a>	\$375
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-475/543/702-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-25x36</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.

### 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-CFP/YFP/mCherry-3X-A-NQF (set mounted in cube) \$1,960 [In Stock](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF02-438/24-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-509/22-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-578/21-25</a>	\$355
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-475/543/702-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-25x36</a>	\$435
Quadfluor cube		<a href="#">NQF</a>	\$395

LED-CFP/YFP/mCherry-3X-A-NQF-ZERO (-ZERO pixel set mounted in cube) \$2,059 [In Stock](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF02-438/24-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-509/22-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-578/21-25</a>	\$355
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-475/543/702-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-25x36</a>	\$435
Quadfluor cube		<a href="#">NQF</a>	\$395
-ZERO set certification		<a href="#">-ZERO</a>	\$99

**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-CFP/YFP/mCherry-3X-A-NTE (set mounted in cube) \$1,960 [In Stock](#)

Filter Role	Filter Size	Part Number	Price1
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF02-438/24-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-509/22-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-578/21-25</a>	\$355
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-475/543/702-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-25x36</a>	\$435
TE 2000 cube		<a href="#">NTE</a>	\$395

LED-CFP/YFP/mCherry-3X-A-NTE-ZERO (-ZERO pixel set mounted in cube) \$2,059 In Stock

Filter Role	Filter Size	Part Number	Price1
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF02-438/24-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-509/22-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-578/21-25</a>	\$355
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-475/543/702-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-25x36</a>	\$435
TE 2000 cube		<a href="#">NTE</a>	\$395
-ZERO set certification		<a href="#">-ZERO</a>	\$99

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

LED-CFP/YFP/mCherry-3X-A-OMF (set mounted in cube) \$2,000 In Stock

Filter Role	Filter Size	Part Number	Price1
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF02-438/24-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-509/22-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-578/21-25</a>	\$355
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-475/543/702-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-25x36</a>	\$435
U-MF2 cube		<a href="#">OMF</a>	\$435

LED-CFP/YFP/mCherry-3X-A-OMF-ZERO (-ZERO pixel set mounted in cube) \$2,099 In Stock

Filter Role	Filter Size	Part Number	Price1
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF02-438/24-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-509/22-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-578/21-25</a>	\$355
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-475/543/702-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-25x36</a>	\$435
U-MF2 cube		<a href="#">OMF</a>	\$435
-ZERO set certification		<a href="#">-ZERO</a>	\$99

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

LED-CFP/YFP/mCherry-3X-A-OFF (set mounted in cube) \$2,000 In Stock

Filter Role	Filter Size	Part Number	Price1
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF02-438/24-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-509/22-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-578/21-25</a>	\$355
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-475/543/702-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-25x36</a>	\$435
U-FF cube		<a href="#">OFF</a>	\$435

LED-CFP/YFP/mCherry-3X-A-OFF-ZERO (-ZERO pixel set mounted in cube) \$2,099 In Stock

Filter Role	Filter Size	Part Number	Price1
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF02-438/24-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-509/22-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-578/21-25</a>	\$355
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-475/543/702-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-25x36</a>	\$435
U-FF cube		<a href="#">OFF</a>	\$435
-ZERO set certification		<a href="#">-ZERO</a>	\$99

#### 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-CFP/YFP/mCherry-3X-A-ZHE (set mounted in cube) \$1,840 In Stock

Filter Role	Filter Size	Part Number	Price1
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF02-438/24-25</a>	\$305

Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-509/22-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-578/21-25</a>	\$355
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-475/543/702-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-25x36</a>	\$435
FL Cube EC P+C cube		<a href="#">ZHE</a>	\$275

LED-CFP/YFP/mCherry-3X-A-ZHE-ZERO (-ZERO pixel set mounted in cube) \$1,939 In Stock

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF02-438/24-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-509/22-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-578/21-25</a>	\$355
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-475/543/702-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-25x36</a>	\$435
FL Cube EC P+C cube		<a href="#">ZHE</a>	\$275
-ZERO set certification		<a href="#">-ZERO</a>	\$99

**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-CFP/YFP/mCherry-3X-A-LDMK (set mounted in cube) \$1,915 Contact Us

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF02-438/24-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-509/22-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-578/21-25</a>	\$355
Triple Band Emitter	23.3 mm x 2.0 mm	<a href="#">FF01-475/543/702-23 3-D</a>	\$435
Triple Band Dichroic	22.0 mm x 29.0 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-22x29</a>	\$435
DM-K cube		<a href="#">LDMK</a>	\$350

LED-CFP/YFP/mCherry-3X-A-LDMK-ZERO (-ZERO pixel set mounted in cube) \$2,014 Contact Us

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF02-438/24-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-509/22-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-578/21-25</a>	\$355
Triple Band Emitter	23.3 mm x 2.0 mm	<a href="#">FF01-475/543/702-23 3-D</a>	\$435
Triple Band Dichroic	22.0 mm x 29.0 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-22x29</a>	\$435
DM-K cube		<a href="#">LDMK</a>	\$350
-ZERO set certification		<a href="#">-ZERO</a>	\$99

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

LED-CFP/YFP/mCherry-3X-A-LDMP-ZERO (-ZERO pixel set mounted in cube) \$2,099 In Stock

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF02-438/24-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-509/22-25</a>	\$355
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-578/21-25</a>	\$355
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-475/543/702-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF459/526/596-Di01-25x36</a>	\$435
DMI8 (P-Cube) cube		<a href="#">LDMP</a>	\$435
-ZERO set certification		<a href="#">-ZERO</a>	\$99

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**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
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.

Cyan	
Fluorophore	Compatibility
Acridine Yellow	★★
<b>Aqua 431</b>	★★★★
<b>ATTO 425</b>	★★★★
ATTO 465	★★
BD Horizon V500	★★
BOBO™-1	★★★
<b>Cerulean</b>	★★★★
<b>CFP (ECFP)</b>	★★★★
DY-415	★★★
ECFP	★★★★
mBBr+GSH	★★
mTFP1	★★
<b>POPO-1</b>	★★★★
PO-PRO-1	★★
<b>SpectrumAqua</b>	★★★★
SYTO 45	★★★
<b>SYTOX Blue</b>	★★★★
<b>TagCFP</b>	★★★★

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

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

Yellow	
Fluorophore	Compatibility
5-carboxy-2,7-dichlorofluorescein	★★★
5-FAM (5-carboxyfluorescein)	★★
<b>6-carboxyrhodamine 6G</b>	★★★★
<b>6-JOE</b>	★★★★
<b>Acridine Orange (+DNA)</b>	★★★★
Alexa Fluor® 488	★★
Alexa Fluor® 500	★★
<b>Alexa Fluor® 514</b>	★★★★
Alexa Fluor® 532	★★
ATTO 488	★★★
<b>ATTO 495</b>	★★★★
<b>ATTO 520</b>	★★★★
ATTO 532	★★
BODIPY R6G	★★★
Calcein	★★
<b>Calcium Green-1</b>	★★★★
CyQUANT GR-DNA	★★★
DAF-FM-NO	★★
Dronpa	★★
<b>DY-505-Phalloidin</b>	★★★★
DyLight 488	★★

<b>Eosin</b>	★★★★
FITC (Fluorescein)	★★
<b>FIAsH-CCPFCC</b>	★★★★
<b>Fluo-3</b>	★★★★
Fluo-4	★★
Fluorescein dextran	★★★
Fluorescein-pH 8.0	★★
Fluoro-Emerald	★★★
FluoSpheres Orange fluorescent microspheres	★★
FluoSpheres Yellow-Green fluorescent microspheres	★★
FM 1-43	★★
<b>Gold 525</b>	★★★★
Green 496	★★
Green 500	★★★
<b>HCS LipidTOX Green phospholipidosis</b>	★★★★
HiLyte Fluor™ 488	★★★
JO-JO-1, JO-PRO-1	★★★
LIVE-DEAD Fixable Green Dead Cell Stain	★★★
LysoTracker Yellow HCK-123	★★
<b>Magnesium Green</b>	★★★★
<b>mHoneyDew</b>	★★★★
NeuroTrace 500/525 Green Fluorescent Nissl Stain	★★
Oregon Green™ 488	★★★
<b>Oregon Green™ 514</b>	★★★★
PicoGreen	★★
Qdot® 525 Nanocrystals	★★
Qdot® 545 Nanocrystals	★★
Rhodamine 110	★★
Rhodamine 123	★★★
Rhodamine Green	★★
Rhodol Green	★★
<b>Sodium Green</b>	★★★★
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 RNASelect geen fluorescent cell stain	★★★
SYTOX Green-DNA	★★★
<b>TO-PRO-1</b>	★★★★
<b>TOTO-1</b>	★★★★
TurboYFP	★★★
<b>Venus</b>	★★★★
VIC	★★
<b>Vybrant DyeCycle Green</b>	★★★★
Vybrant DyeCycle Orange	★★★
<b>YFP (yellow GFP)</b>	★★★★
ZsYellow1	★★★

★★★★ 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
2-dodecylresorufin-lipid	★★
<b>5-carboxynaphthofluorescein (pH 10)</b>	★★★★
<b>5-ROX (carboxy-X-rhodamine)</b>	★★★★
7-AAD	★★

Alexa Fluor® 568	☆☆☆☆
Alexa Fluor® 594	☆☆☆☆
Alexa Fluor® 660	☆☆
APC (Allophycocyanin)	☆☆
AsRed 2	☆☆☆☆
ATTO 565	☆☆
ATTO 590	☆☆☆☆
ATTO 594	☆☆☆☆
ATTO 610	☆☆
BOBO™-3	☆☆☆☆
BODIPY TR-X phalloidin	☆☆☆☆
Calcium Crimson	☆☆☆☆
Carboxynaphthofluorescein	☆☆☆☆
CellTrace BODIPY TR methyl ester	☆☆☆☆
CellTracker Red CMTPX	☆☆☆☆
Cy3.5™	☆☆
DDAO	☆☆
DY-590	☆☆☆
DY-630	☆☆
DyLight 594	☆☆☆☆
FluoSpheres Crimson fluorescent microspheres	☆☆
FluoSpheres Red fluorescent microspheres	☆☆☆☆
FM 4-64	☆☆
HcRed1	☆☆☆
HCS LipidTOX Deep Red neutral lipid stain	☆☆
HCS LipidTOX Red neutral lipid stain	☆☆☆☆
HCS LipidTOX Red phospholipidosis	☆☆☆☆
HiLyte Fluor™ 594	☆☆☆☆
KFP-Red	☆☆☆☆
LDS 751	☆☆☆☆
LIVE-DEAD Fixable Red Dead Cell Stain	☆☆☆☆
LysoTracker Red	☆☆☆
mApple	☆☆☆
mCherry	☆☆☆☆
MitoTracker™ Red	☆☆☆☆
mPlum	☆☆☆☆
mRFP1	☆☆☆☆
mRuby	☆☆
mStrawberry	☆☆☆
Nile blue-EtOH	☆☆
Nile red-phospholipid	☆☆☆
PerCP	☆☆
Propidium Iodide (PI)	☆☆☆☆
Qdot® 605 Nanocrystals	☆☆
Qdot® 625 Nanocrystals	☆☆
Qdot® 655 Nanocrystals	☆☆
Qdot® 705 Nanocrystals	☆☆
Qdot® 800 Nanocrystals	☆☆
ReAsH-CCPGCC	☆☆☆☆
Red 580	☆☆☆☆
Rhodamine Red-X	☆☆
SNARF (carboxy) 514 Excitation pH 9	☆☆☆☆
SNARF-1 488nm (pH 9.0)	☆☆☆☆
SNARF-1 514nm (pH 9.0)	☆☆☆☆
SpectrumRed	☆☆☆☆
Sulforhodamine 101-EtOH	☆☆
SYTO 17	☆☆
SYTO 61	☆☆
Texas Red dextran	☆☆☆☆

Texas Red DHPE	★ ★ ★ ★
Texas Red-X®	★ ★ ★ ★
TurboFP635(Katushka)	★ ★ ★ ★
X-Rhod-1 Indicator	★ ★ ★ ★
YO-PRO-3	★ ★
YOYO-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