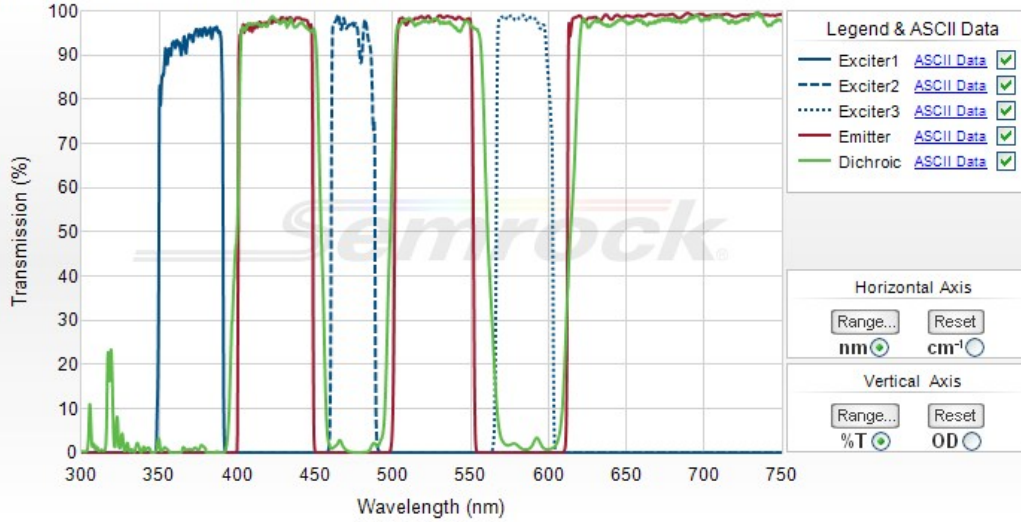


**BrightLine® Pinkel filter set, optimized for Blue & Green Fluorescent Proteins & HcRed and other like fluorophores**

Part Number: BFP/GFP/HcRed-3X-A-000



**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)

**BrightLine® Pinkel filter set, optimized for Blue & Green Fluorescent Proteins & HcRed and other like fluorophores**

This filter set is ideal for imaging samples that are triple-labeled with blue, green, and red fluorescent proteins (BFP, GFP, and HcRed in particular). It is also excellent for samples with a DAPI (or Hoechst) stain in the blue channel, and other green or red fluorophores like FITC or Texas Red in the green and red channels, respectively. The red band is very wide to allow maximum brightness in this channel.

**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"/> BFP/GFP/HcRed-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	FF01-370/36-25	\$305
Single Band Exciter	25 mm x 5.0 mm	FF01-474/23-25	\$405
Single Band Exciter	25 mm x 5.0 mm	FF01-585/29-25	\$305
Triple Band Emitter	25 mm x 3.5 mm	FF01-425/527/685-25	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	FF395/495/610-Di01-25x36	\$435
<input checked="" type="checkbox"/> BFP/GFP/HcRed-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	FF01-370/36-25	\$305
Single Band Exciter	25 mm x 5.0 mm	FF01-474/23-25	\$405
Single Band Exciter	25 mm x 5.0 mm	FF01-585/29-25	\$305
Triple Band Emitter	23.3 mm x 2.0 mm	FF01-425/527/685-23.3-D	\$435
Triple Band Dichroic	22.0 mm x 29.0 mm x 1.1 mm	FF395/495/610-Di01-22x29	\$435
<input checked="" type="checkbox"/> BFP/GFP/HcRed-3X-A-L02 (Leica 'Small' set)	\$1,829	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	FF01-370/36-25	\$305
Single Band Exciter	25 mm x 5.0 mm	FF01-474/23-25	\$405
Single Band Exciter	25 mm x 5.0 mm	FF01-585/29-25	\$305
<input checked="" type="checkbox"/> BFP/GFP/HcRed-3X-A-000-X32 (Standard size set, fits most microscopes)	\$2,059	Contact Us	
<b>Filter Role</b>	<b>Filter Size</b>	<b>Part Number</b>	<b>Price<sup>1</sup></b>
<input checked="" type="checkbox"/> BFP/GFP/HcRed-3X-A-L01-X32 (Leica 'Large' set)	\$2,059	Contact Us	
<b>Filter Role</b>	<b>Filter Size</b>	<b>Part Number</b>	<b>Price<sup>1</sup></b>
<input checked="" type="checkbox"/> BFP/GFP/HcRed-3X-A-L02-X32 (Leica 'Small' set)	\$2,359	Contact Us	
<b>Filter Role</b>	<b>Filter Size</b>	<b>Part Number</b>	<b>Price<sup>1</sup></b>
\$1,625	Contact Us		
<b>Filter Role</b>	<b>Filter Size</b>	<b>Part Number</b>	<b>Price<sup>1</sup></b>

25 mm threaded ring for Sutter

Single Band Exciter	25 mm threaded ring for Sutter Lambda filter wheel	<a href="#">FF01-370/36-25-STR</a>	\$325
Single Band Exciter	25 mm threaded ring for Sutter Lambda filter wheel	<a href="#">FF01-474/23-25-STR</a>	\$425
Single Band Exciter	25 mm threaded ring for Sutter Lambda filter wheel	<a href="#">FF01-585/29-25-STR</a>	\$325
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-425/527/685-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF395/495/610-Di01-25x36</a>	\$435

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

BFP/GFP/HcRed-3X-A-NQF (set mounted in cube) \$1,960 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-370/36-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/23-25</a>	\$405
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-585/29-25</a>	\$305
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-425/527/685-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF395/495/610-Di01-25x36</a>	\$435
Quadfluor cube		<a href="#">NQF</a>	\$395

BFP/GFP/HcRed-3X-A-NQF-X32 (set mounted in cube) \$2,444 [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

BFP/GFP/HcRed-3X-A-NTE (set mounted in cube) \$1,960 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-370/36-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/23-25</a>	\$405
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-585/29-25</a>	\$305
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-425/527/685-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF395/495/610-Di01-25x36</a>	\$435
TE 2000 cube		<a href="#">NTE</a>	\$395

BFP/GFP/HcRed-3X-A-NTE-X32 (set mounted in cube) \$2,444 [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

BFP/GFP/HcRed-3X-A-OMF (set mounted in cube) \$2,000 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-370/36-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/23-25</a>	\$405
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-585/29-25</a>	\$305
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-425/527/685-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF395/495/610-Di01-25x36</a>	\$435
U-MF2 cube		<a href="#">OMF</a>	\$435

BFP/GFP/HcRed-3X-A-OMF-X32 (set mounted in cube) \$2,479 [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

BFP/GFP/HcRed-3X-A-OFF (set mounted in cube) \$2,000 [Contact Us](#)

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-370/36-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/23-25</a>	\$405
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-585/29-25</a>	\$305
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-425/527/685-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF395/495/610-Di01-25x36</a>	\$435
U-FF cube		<a href="#">OFF</a>	\$435

☑ BFP/GFP/HcRed-3X-A-OFF-X32 (set mounted in cube) \$2,479 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

☑ BFP/GFP/HcRed-3X-A-ZHE (set mounted in cube) \$1,840 Contact Us

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-370/36-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/23-25</a>	\$405
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-585/29-25</a>	\$305
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-425/527/685-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF395/495/610-Di01-25x36</a>	\$435
FL Cube EC P+C cube		<a href="#">ZHE</a>	\$275

☑ BFP/GFP/HcRed-3X-A-ZHE-X32 (set mounted in cube) \$2,384 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

☑ BFP/GFP/HcRed-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="#">FF01-370/36-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/23-25</a>	\$405
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-585/29-25</a>	\$305
Triple Band Emitter	23.3 mm x 2.0 mm	<a href="#">FF01-425/527/685-23.3-D</a>	\$435
Triple Band Dichroic	22.0 mm x 29.0 mm x 1.1 mm	<a href="#">FF395/495/610-Di01-22x29</a>	\$435
DM-K cube		<a href="#">LDMK</a>	\$350

☑ BFP/GFP/HcRed-3X-A-LDMK-X32 (set mounted in cube) \$2,479 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

☑ BFP/GFP/HcRed-3X-A-LDMP (set mounted in cube) \$2,000 Contact Us

Filter Role	Filter Size	Part Number	Price <sup>1</sup>
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-370/36-25</a>	\$305
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-474/23-25</a>	\$405
Single Band Exciter	25 mm x 5.0 mm	<a href="#">FF01-585/29-25</a>	\$305
Triple Band Emitter	25 mm x 3.5 mm	<a href="#">FF01-425/527/685-25</a>	\$435
Triple Band Dichroic	25.2 mm x 35.6 mm x 1.1 mm	<a href="#">FF395/495/610-Di01-25x36</a>	\$435
DMI8 (P-Cube) cube		<a href="#">LDMP</a>	\$435

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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.

### Blue

Fluorophore	Compatibility
4-methylumbelliferone	★★★
7-amino-4-methylcoumarin (AMC)	★★
7-hydroxy-4-methylcoumarin	★★
<b>Alexa Fluor® 350</b>	★★★★
Alexa Fluor® 405	★★
<b>AMCA (Aminomethylcoumarin)</b>	★★★★
BD Horizon V450	★★
<b>BFP (EBFP)</b>	★★★★
Calcofluor White	★★★
Cascade Blue™	★★
<b>DAPI</b>	★★★★
DiFMU-pH 9.0	★★
DyLight 350	★★★
FluoSpheres Blue fluorescent microspheres	★★★
HiLyte Fluor™ 405	★★
Hoechst 33258	★★
Hoechst 33342	★★★
Hoechst 34580	★★★
LIVE-DEAD Fixable Blue Dead Cell Stain	★★
LysoSensor Blue	★★
LysoTracker Blue	★★★
Marina Blue	★★
Quinine sulfate	★★
sgBFP™	★★
Sirius	★★★
Vybrant DyeCycle Violet	★★★

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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.

### Green

Fluorophore	Compatibility
5-FAM (5-carboxyfluorescein)	★★★
Acridine Orange (+DNA)	★★
Acridine Yellow	★★
Alexa Fluor® 430	★★
<b>Alexa Fluor® 488</b>	★★★★
Alexa Fluor® 500	★★
AmCyan1	★★
ATTO 465	★★
ATTO 488	★★
ATTO 495	★★
BCECF (pH 5.5)	★★★
BCECF (pH 9.0)	★★
BOBO™-1	★★
BODIPY FL	★★
BODIPY FL-MeOH	★★
Calcein	★★
CFP2	★★★
Cy2™	★★★
CyQUANT GR-DNA	★★

DAF-FM-NO	☆☆
Dendra2 (Green)	☆☆☆
DiA	☆☆
DiO	☆☆☆
Dronpa	☆☆
ecliptic pHluorin pH5.5	☆☆☆
Emerald	☆☆☆
evoglow-Bs1	☆☆
<b>FITC (Fluorescein)</b>	☆☆☆☆
Fluo-4	☆☆
Fluorescein dextran	☆☆
Fluorescein-pH 8.0	☆☆
Fluoro-Emerald	☆☆
FluoSpheres Yellow-Green fluorescent microspheres	☆☆
FM 1-43	☆☆
<b>GFP (EGFP)</b>	☆☆☆☆
Green 496	☆☆
Green 500	☆☆
HCS LipidTOX Green phospholipidosis	☆☆
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	☆☆
Qdot® 545 Nanocrystals	☆☆
ratiometric pHluorin pH5	☆☆
Rhodamine 110	☆☆
Rhodamine Green	☆☆
Rhodol Green	☆☆
sgGFP™ (super glow GFP)	☆☆☆
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	☆☆☆
SYTO 16	☆☆☆
SYTO 9	☆☆☆
SYTO RNASelect geen fluorescent cell stain	☆☆
SYTOX Green-DNA	☆☆
TagCFP	☆☆
TOTO-1	☆☆
TurboGFP	☆☆☆
Vybrant DyeCycle Green	☆☆
wtGFP (wild type GFP, non-UV excitation)	☆☆☆
YO-PRO-1	☆☆☆
YOYO-1	☆☆☆

★★★★ 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.

## Yellow

Fluorophore	Compatibility
Alexa Fluor® 568	★★★
Cy3.5™	★★★

★★★★ 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)	★★★
5-ROX (carboxy-X-rhodamine)	★★
7-AAD	★★
<b>Alexa Fluor® 594</b>	★★★★★
Alexa Fluor® 660	★★
APC	★★
APC (Allophycocyanin)	★★
ATTO 590	★★★
ATTO 594	★★★
ATTO 610	★★
ATTO 620	★★
BOBO™-3	★★
BODIPY 630/650-X	★★
BODIPY TR-X phalloidin	★★★
Calcium Crimson	★★
Carboxynaphthofluorescein	★★★
CellTrace BODIPY TR methyl ester	★★★
CellTracker Red CMTPX	★★★
ChlorophyllA	★★★
DDAO	★★★
DyLight 594	★★★
DyLight 633	★★
FluoSpheres Crimson fluorescent microspheres	★★
FluoSpheres Red fluorescent microspheres	★★
FM 4-64	★★
<b>HcRed1</b>	★★★★★
HCS CellMask Red cytoplasmic	★★
HCS LipidTOX Deep Red neutral lipid stain	★★
HCS LipidTOX Red neutral lipid stain	★★★
HCS LipidTOX Red phospholipidosis	★★
HiLyte Fluor™ 594	★★★
LDS 751	★★★
LIVE-DEAD Fixable Red Dead Cell Stain	★★
mApple	★★
mCherry	★★
mKate2	★★★
mPlum	★★★
mRFP1	★★
Nile blue-EtOH	★★
Nile red-phospholipid	★★
PerCP	★★
Propidium Iodide (PI)	★★
ReAsH-CCPGCC	★★
ReAsH	★★

Red 580	☆☆
SNARF (carboxy) 514 Excitation pH 9	☆☆☆
SNARF-1 488nm (ph 9.0)	☆☆☆
SNARF-1 514nm (ph 9.0)	☆☆☆
SpectrumRed	☆☆☆
SYTO 17	☆☆
SYTO 59	☆☆
SYTO 61	☆☆
Texas Red dextran	☆☆☆
Texas Red DHPE	☆☆
Texas Red®	☆☆
TurboFP635(Katushka)	☆☆☆
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