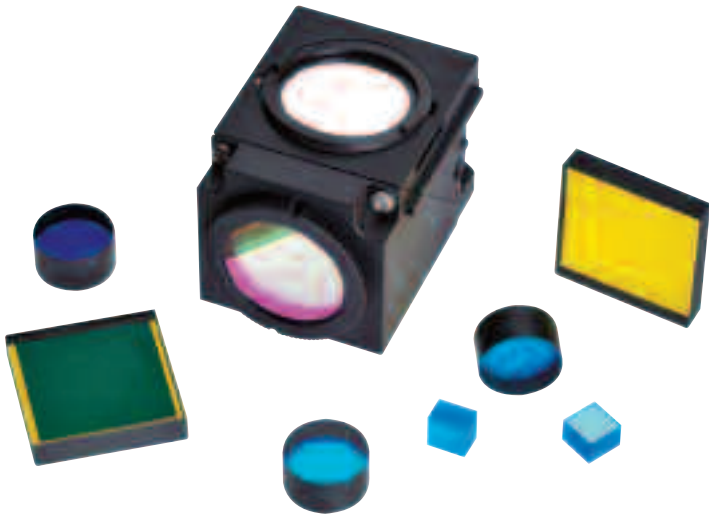


HPF™ Fluorescence Filters



- Patented Stabilife® Coatings
- Shift free spectral response @ 0% - 100%RH
- Humidity per MIL-STD-810, Method 507.3, Procedure III, 20 cycles
- 4 configuration options including micro-chip & ghost free imaging configurations
- Lowest autofluorescence
- Extremely sharp transitions from rejection to transmission regions
- Maximum transmission

Newport's HPF series of filters for fluorescence detection is a compilation of product designs of filters to be used with many of the most popular standard fluorophores and some of the most promising new fluorophores. These product designs have been developed to function as a basic starting point for custom designed filters for any one of these fluorophores. Working with OEM instrument design engineers, our applications engineers develop modifications to these basic product designs to provide the specific spectral and physical characteristics required for the instrument. HPF filters are manufactured using Newport's patented Stabilife® coating technology which provides excellent spectral performance, spectral stability, and physical durability. Stabilife® HPF filters can be supplied in a variety of configurations including a traditional laminated multi-component format, an air-spaced multi-component format, a single substrate optic quality element (for imaging applications), and a single thin substrate, for dicing into microchip format for micro-array applications.

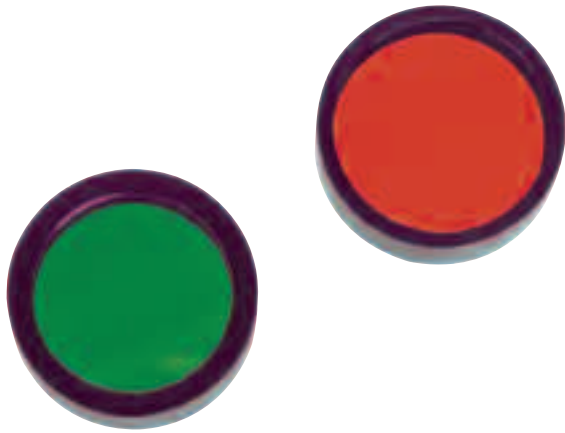
HPF Fluorescence Filter Sets

Fluorophore	Filter Set	Excitation Filter	Dichroic Filter	Emission Filter
5-FAM	HPF1245	HPX475/44	505	HPM535/50
5-ROX	HPF1340	HPX560/50	590	HPM640/60
5-TAMRA	HPF1335	HPX525/45	560	HPM620/75
6-HEX	HPF1295	HPX520/40	550	HPM590/55
6-JOE	HPF1230	HPX500/20	515	HPM530LP
6-TET	HPF1280	HPX500/40	530	HPM575/50
Alexa Fluor® 350	HPF1205	HPX360/60	400	HPM460/60
Alexa Fluor® 430	HPF1255	HPX425/40	490	HPM540/40
Alexa Fluor® 488	HPF1245	HPX475/44	505	HPM535/50
Alexa Fluor® 532	HPF1275	HPX500/40	530	HPM560/50
Alexa Fluor® 546	HPF1300	HPX525/45	560	HPM600/60
Alexa Fluor® 555	HPF1300	HPX525/45	560	HPM600/60
Alexa Fluor® 568	HPF1345	HPX560/40	595	HPM640/60
Alexa Fluor® 594	HPF1345	HPX560/40	595	HPM640/60
Alexa Fluor® 633	HPF1385	HPX610/60	645	HPM685/50
Alexa Fluor® 647	HPF1400	HPX620/50	660	HPM700/60
Alexa Fluor® 660	HPF1410	HPX630/60	680	HPM720/60
Alexa Fluor® 680	HPF1415	HPX660/40	695	HPM725/40
Alexa Fluor® 700	HPF1420	HPX660/40	695	HPM740/50
Alexa Fluor® 750	HPF1430	HPX710/50	760	HPM810/80

Fluorophore	Filter Set	Excitation Filter	Dichroic Filter	Emission Filter
AMCA	HPF1205	HPX360/60	400	HPM460/60
BODIPY® 630/650	HPF1380	HPX605/40	635	HPM670/50
BODIPY® 650/665	HPF1395	HPX630/40	660	HPM695/50
BODIPY® FL	HPF1250	HPX480/40	505	HPM535/50
BODIPY® R6G	HPF1285	HPX510/40	540	HPM575/50
BODIPY® TMR	HPF1305	HPX530/40	560	HPM600/60
BODIPY® TR	HPF1355	HPX570/40	610	HPM645/50
Calcium Crimson	HPF1365	HPX570/40	595	HPM645/60
CFP	HPF1220	HPX440/20	455	HPM480/40
Cy3.5™	HPF1325	HPX565/30	580	HPM620/60
Cy3™	HPF1310	HPX535/40	565	HPM610/50
Cy5.5™	HPF1405	HPX645/40	675	HPM710/50
Cy5™	HPF1390	HPX620/50	655	HPM690/50
Cy7™	HPF1425	HPX710/50	755	HPM800/70
DAPI	HPF1205	HPX360/60	400	HPM460/60
Dil(rs)	HPF1315	HPX535/50	565	HPM620/60
DiO	HPF1250	HPX480/40	505	HPM535/50
DsRed	HPF1320	HPX545/30	570	HPM620/60
Eosin	HPF1270	HPX500/40	525	HPM560/50
Ethidium Bromide	HPF1350	HPX525/45	565	HPM640/70
FITC	HPF1250	HPX480/40	505	HPM535/50
Fluo 3	HPF1250	HPX480/40	505	HPM535/50
Fluo 4	HPF1250	HPX480/40	505	HPM535/50
GFP	HPF1240	HPX470/40	495	HPM535/50
GFP(rs)	HPF1250	HPX480/40	505	HPM535/50
GFP(wt)	HPF1225	HPX450/50	480	HPM510/50
Hoechst 33342 & 33258	HPF1200	HPX350/60	400	HPM460/60
LysoSensor™ Blue (pH 5)	HPF1210	HPX380/40	410	HPM460/60
MitoTracker® Orange	HPF1335	HPX525/45	560	HPM620/75
MitoTracker® Red	HPF1340	HPX560/50	590	HPM640/60
Nile Red	HPF1360	HPX525/45	565	HPM645/60
Oregon Green™	HPF1260	HPX485/30	515	HPM545/30
Pacific Blue™	HPF1215	HPX400/30	440	HPM470/30
PE (B,R)	HPF1290	HPX525/45	560	HPM585/40
Propidium Iodide	HPF1370	HPX525/45	565	HPM645/75
Resorufin	HPF1375	HPX560/50	595	HPM645/75
Rhodamine	HPF1330	HPX570/20	585	HPM620/60
Rhodamine Green™	HPF1235	HPX500/20	515	HPM535/30
Texas Red®	HPF1375	HPX560/50	595	HPM645/75
TRITC	HPF1300	HPX525/45	560	HPM600/60
YFP	HPF1265	HPX500/20	525	HPM550/40
YGFP	HPF1235	HPX500/20	515	HPM535/30

HPF Series Filters are available as custom manufactured products

High Signal-to-Noise Fluorescence Filters

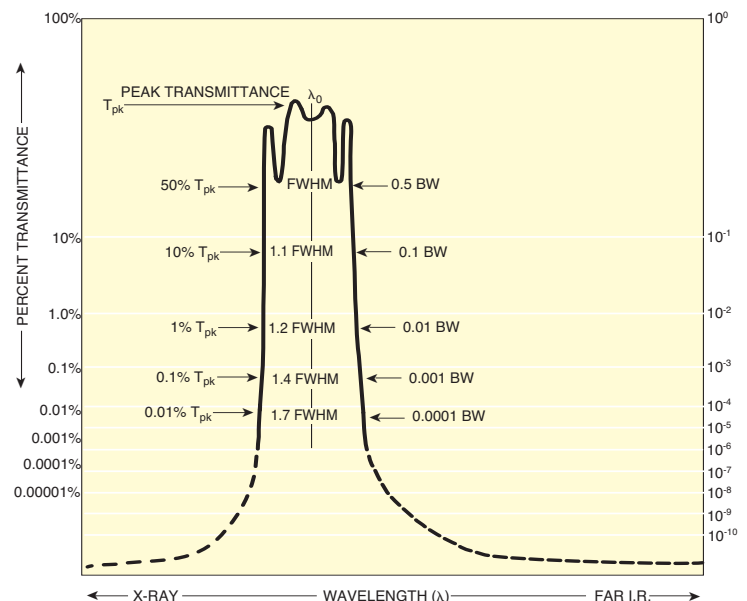


- High transmission
- Excellent spectral blocking
- Very low autofluorescence
- Excellent paired crosstalk suppression
- Patented Stabilife® construction
- Superior field life

Newport's High Signal-to-Noise Fluorescence Filters are designed for use in systems where high signal-to-noise ratios of each filter must be established independently. Many fluorescence detection filters, being developed for epi-fluorescence microscopy applications, depend upon pairing to achieve pair-specific signal-to-noise ratios. High S/N fluorescence filters do not have this limitation. With a typical non-paired signal-to-noise ratio of 100,000:1, any High S/N filter can be paired with any other filter in the series, and deliver the same exceptional pair signal-to-noise ratio as would have been achieved with its traditional pair. The filters are designed with bandwidths consistent with the absorbance or emission spectra of the target fluorophore, but narrower to accommodate non-traditional pairing. Using a multi-cavity film design and multiple blocking components, typical spectral rejection (blocking) of $\leq 1.0 \times 10^{-8}$ is achieved from UV to 925nm. This provides integrated blocking of $\geq OD5$ when used with a tungsten source operating at 2800 °K and an S20 or equivalent photocathode detector. Developed as XM Fluorescence Filters and manufactured in Newport's Franklin, MA facility, these filters are a key enabling technology in numerous fluorescence based research and clinical instruments. Typical applications include instrumentation for flow cytometry, drug discovery, genetic analysis, and other fluorescence-based instrumentation.

Specifications

Diameter	+0/-0.5
Minimum Active Area	20.2 mm
Surface Quality	80-50 scratch-dig; F/F per MIL-F-48616
Thickness	1.0 to 9.0 mm
Effective Index of Refraction n_e	1.5
Wavelength Shift with Temperature	0.01 nm/°C
Temperature Range	-50°C to +100 °C
Data Curve Information	Bandshape specifications and marker wavelengths are provided as approximate reference data only



Integrated Cross-Talk Data for Fluorophore-Specific Filter Pairs

Dye	Wavelength of Max Absorption	Wavelength of Max Emission	Excitation Filter	Emission Filter	Integrated Cross-Talk (Reference Only)
Aminomethylcoumarin (AMC)	345	442	10XM35-360	10XM35-430	1,000,000:1
DAPI	358	458	10XM35-360	10XM35-465	100,000,000:1
Hoechst 33258	351	455			
4-Methylumbeliferone	360	450			
CPM	385	471			
Lucifer Yellow	430	540	10XM35-430	10XM25-535	1,000,000:1
Acridine Orange (+RNA)	460	650	10XM35-465	10XM35-625	1,000,000:1
YOYO-1 (+DNA)	491	509	10XM20-485	10XM25-535	100,000,000:1
Fluorescein (FITC)	495	519			
Acridine Orange (+DNA)	502	526			
BODIPY FL	503	512			
Rhodamine 123	505	528			
Ethidium Bromide (+DNA)	510	595	10XM20-485	10XM35-595	100,000,000:1
Tetramethylrhodamine (TRITC)	552	580	10XM25-530	10XM35-595	10,000,000:1
R-phycoerythrin	565	575	10XM20-485	10XM10-585	1,000,000:1
Ethidium Homodimer-1	528	617	10XM25-530	10XM35-625	100,000,000:1
Propidium Iodide	536	617			
7-Aminoactinomycin (7-AAD)	550	645	10XM25-530	10XM40-650	1,000,000,000:1
Texas Red	595	615	10XM20-590	10XM35-635	100,000:1

Ordering Information

Center Wavelength (nm)	FWHM (nm)	Minimum Peak Transmission (%)	Signal-to-Noise Ratio	Integrated Blocking Range	Model
360, +0/-5	35±3.5	45	10,000:1	X-ray to 700 nm	10XM35-360
425, +5/-0	35±3.5	50	100,000:1	X-Ray to 925 nm	10XM35-430
460, +5/-0	35±3.5	50	100,000:1	X-Ray to 925 nm	10XM35-465
485, +0/-5	20±2.0	60	100,000:1	X-Ray to 925 nm	10XM20-485
530, +0/-5	25±2.5	60	100,000:1	X-Ray to 925 nm	10XM25-530
530, +5/-0	25±2.5	60	100,000:1	X-Ray to 925 nm	10XM25-535
540, +0/-5	25±2.5	60	100,000:1	X-Ray to 925 nm	10XM25-540
550, +0/-5	10±1.0	50	100,000:1	X-Ray to 1.2 μm	10XM10-550
580, +5/-0	10±1.0	50	100,000:1	X-Ray to 1.2 μm	10XM10-585
590, +0/-5	20±2.0	65	100,000:1	X-Ray to 925 nm	10XM20-590
590, +5/-0	35±3.5	65	100,000:1	X-Ray to 925 nm	10XM35-595
620, +5/-0	35±3.5	65	100,000:1	X-Ray to 925 nm	10XM35-625
630, +5/-0	35±3.5	65	100,000:1	X-Ray to 925 nm	10XM35-635
645, +5/-0	40±4.0	65	100,000:1	X-Ray to 925 nm	10XM40-650

In addition to the inventoried standard items, we manufacture 12.7 mm diameter (-A) and 18 mm diameter (-C) versions of these filters on a custom basis. Custom filters based upon standard High S/N designs and construction processes are routinely developed to meet customer defined performance requirements. Contact our applications experts to define the product that will provide the best performance for your application.



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