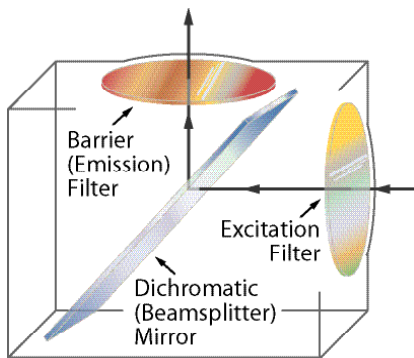


Fluorescence Filters



Key Features

- High peak transmission
- Deep blocking over wide spectral ranges
- Steep transition slopes
- Precise edge placement
- Low autofluorescence
- Hard dielectric coatings that are robust and reliable
- Single substrate, epoxy free optical path
- High brightness
- Large signal to noise ratio/high contrast
- Customer-specified sizes and mounting options available

Applications

- Fluorescence microscopy
- Confocal microscopy
- Flow cytometry
- Genotyping
- Microplate readers
- Imaging systems
- Spectroscopy

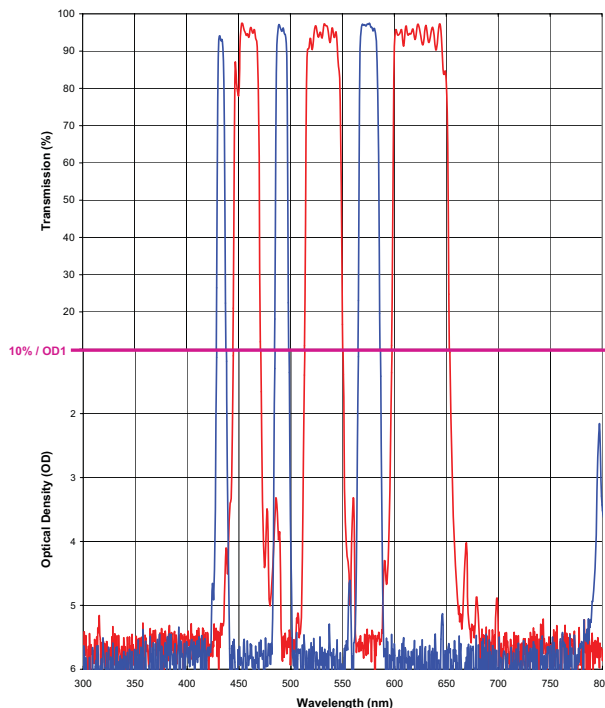
JDSU builds fluorescence filter sets for applications in fluorescence microscopy and other biomedical applications. In one of the more common applications, a filter set is composed of an excitation filter, an emission filter, and a dichroic beamsplitter. A filter set may be designed to work with a single fluorophore or with multiple fluorophores simultaneously.

The superior precision and repeatability of the new Ucp-1 filter deposition platform enables the realization of filters with exceptional blocking levels, high transmission levels, and very steep transition zones. The practical result in fluorescence based applications is bright, high-contrast images.

JDSU's Ucp-1 platform is a magnetron-sputtering-based deposition system. The high throughput of the system is enabled by a high material deposition rate combined with the incorporation of a load lock which reduces chamber down time. Coatings deposited with the Ucp-1 platform are fully dense and robust, and have the same durability as coatings deposited using other energetic film deposition processes such as ion beam sputtering and ion-assisted deposition. Ucp-1 coatings pass the environmental durability tests cited in ISO-9211-3 Category C, as well as extended cyclic humidity testing as described in MIL-STD-810F (5 cycles) without measurable change in their spectral characteristics.

Ucp-1-deposited excitation (blue) and emission (red) triple-band filters for simultaneous viewing of 3 fluorophores: CFP, YFP, DsRed

Blocking (>OD6 – note that measurement is noise limited)



Specifications

Representative Specifications for Custom Fluorescence Filter Sets

	Exciter	Emitter	Dichroic
Substrates		BK7, UBK7, Fused Silica	
Passband transmission ¹	>90%	>90%	>90%
Reflection	N/A	N/A	>98%
Dimensional tolerance		+0.0/-0.1 mm	
Thickness tolerance		±0.1 mm	
Surface quality		60-40 Scratch-Dig	
Clear aperture		>80% of Filter Dimension	
Blocking ²	>OD6	>OD6	N/A
Environmental/Reliability/Durability	ISO-9211-3 Category C/MIL-STD 810F/MIL-STD 48497A		

1. Filters having passbands below 400 nm may have lower transmission.
 2. Blocking exceeds OD6 in required spectral regions.

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