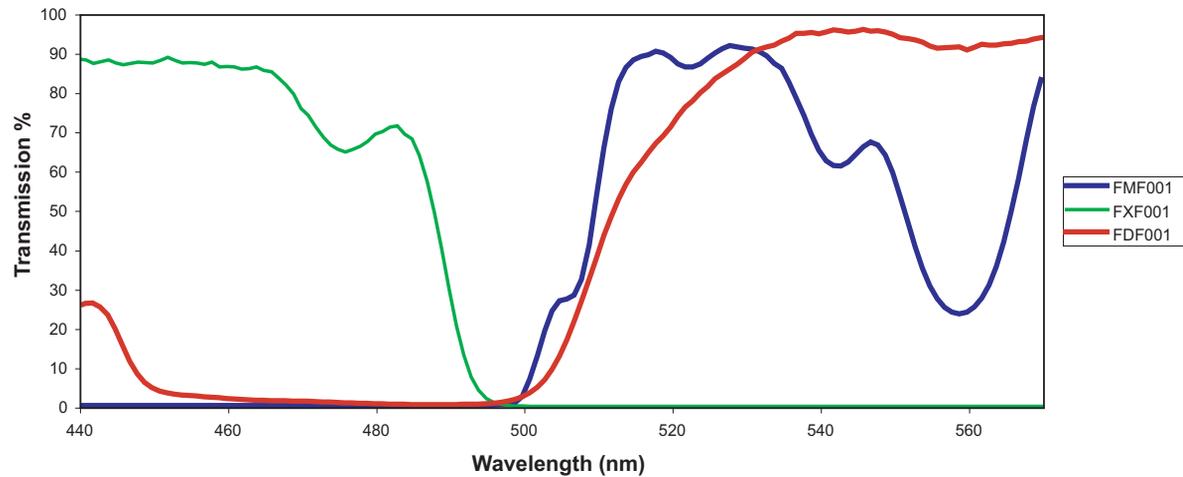


Fluorescence Filters



Introduction

Thorlabs now offers a selection of filters specifically designed and manufactured for fluorescence imaging applications. Standard fluorescence imaging applications generally incorporate three different filters: an excitation filter, a dichroic mirror, and an emissions filter. Thorlabs offers these three types of filters to accommodate the key wavelength ranges for many common fluorophores (or their alternatives), including Alexa 488, Rhodamine, Cy5, Cy3, and GFP.



EXCITATION	ALEXA 488 (FXF001)	GFP (FXF002)	CY3 (FXF003)	RHOD (FXF005)	CY5 (FXF004)
Transmission Wavelength (>85%)(nm)	430-470	455-490	505-555	535-585	605-650
Wavelength Cutoff (<0.1%)(nm)	380-415, 500-680	400-455, 490-650	450-505, 555-700	500-535, 585-750	550-605, 650-800
EMMISSION	ALEXA 488 (FMF001)	GFP (FMF002)	CY3 (FMF003)	RHOD (FMF005)	CY5 (FMF004)
Transmission Wavelength (>85%)(nm)	515-535	500-540	570-620	600-655	655-720
Wavelength Cutoff (>0.1%)(nm)	430-505	400-500, 540-650	450-570, 600-700	500-535, 585-750	550-665, 720-800
DICHROIC	ALEXA 488 (FDF001)	GFP (FDF002)	CY3 (FDF003)	RHOD (FDF005)	CY5 (FDF004)
Transmission Wavelength (>85%)(nm)	530-610	500-650	575-700	600-750	675-720
Reflection Wavelength (>85%)(nm)	460-500	400-475	450-550	500-580	550-650

Edgepass and Bandpass Filters

Edgepass Filters



- Both Long and Short Pass Versions
- Hermetically Sealed for Humidity Protection
- Custom Filtering Available

See Page 844

Bandpass Filters



- From 340-1650nm
- <0.01% Out-of-Band Transmission
- From 1nm to 70nm Full Width Half Max. Bandpass

See Page 843

Filter Design

The excitation and emission filters are mounted in a black anodized housing while Thorlabs' dichroic filters are unmounted. These filters are manufactured to high-performance optical specifications and designed for durability. They are produced with multiple dielectric layers deposited on a high-precision glass substrate, which is ground and polished to ensure that the highest possible image quality is maintained. This manufacturing technique produces filter layers that are more dense than those obtained from electron beam deposition techniques. The dense filter layers reduce water absorption and greatly enhance durability, stability, and performance of the filter. Each filter layer is monitored during growth to ensure minimal deviation from design specification thickness, ensuring overall high-quality filter performance.

All filters conform to MIL-F-48616 for adhesion and resistance to humidity, moderate abrasion, solubility, and cleanability. They also conform to MIL-C-675 and MIL-E-12397 resistance to severe abrasion.

Fluorescence Filters

General Specifications

- 25mm Outer Diameter
- 21mm Clear Aperture
- 5mm Thick
- 20-10 Scratch-Dig



FXF Series Excitation Filters & FMF Series Emissions Filters

These fluorescent filters are specifically designed to be used in microscopy and imaging. With a selection of excitation and emissions filters for specific fluorophores, these filters, along with the fast filter wheels, allow for the construction of custom microscopy setups. Each filter is deposited on a 5mm thick round substrate and mounted in a black anodised housing. These filters provide excellent transmission of the desired excitation wavelength (>85%), with a sharp spectral cutoff and low transmission at other wavelengths (<0.1%). These filters may be mounted into our Fast Filter Wheel (FW103) to allow rapid wavelength changes (see page 638).

ITEM#	\$	£	€	RMB	DESCRIPTION
FXF001	\$ 220.00	£ 138.60	€ 204.60	¥ 2,101.00	Alexa 488 Excitation Filter
FXF002	\$ 220.00	£ 138.60	€ 204.60	¥ 2,101.00	GFP Excitation Filter
FXF003	\$ 220.00	£ 138.60	€ 204.60	¥ 2,101.00	CY3 Excitation Filter
FXF004	\$ 220.00	£ 138.60	€ 204.60	¥ 2,101.00	CY5 Excitation Filter
FXF005	\$ 220.00	£ 138.60	€ 204.60	¥ 2,101.00	Rhodamine Excitation Filter
FMF001	\$ 220.00	£ 138.60	€ 204.60	¥ 2,101.00	Alexa 488 Emission Filter
FMF002	\$ 220.00	£ 138.60	€ 204.60	¥ 2,101.00	GFP Emission Filter
FMF003	\$ 220.00	£ 138.60	€ 204.60	¥ 2,101.00	CY3 Emission Filter
FMF004	\$ 220.00	£ 138.60	€ 204.60	¥ 2,101.00	CY5 Emission Filter
FMF005	\$ 220.00	£ 138.60	€ 204.60	¥ 2,101.00	Rhodamine Emission Filter

DFD Series Dichroic Filters

Thorlabs Dichroic Filters are designed to separate light of different wavelengths. With a 45° angle of incidence, they reflect excitation light and its associated back reflection while passing the longer wavelength fluorescence signal. These filters are unmounted and may be used directly with the Thorlabs Dichroic Filter Wheel (FW104) for rapid filter changing of up to six different configurations (see page 639).

General Specifications

- 25 x 36mm
- 1.1mm Thick
- 20-10 Scratch-Dig

ITEM#	\$	£	€	RMB	DESCRIPTION
DFD001	\$ 220.00	£ 138.60	€ 204.60	¥ 2,101.00	Alexa 488 Dichroic Filter
DFD002	\$ 220.00	£ 138.60	€ 204.60	¥ 2,101.00	GFP Dichroic Filter
DFD003	\$ 220.00	£ 138.60	€ 204.60	¥ 2,101.00	CY3 Dichroic Filter
DFD004	\$ 220.00	£ 138.60	€ 204.60	¥ 2,101.00	CY5 Dichroic Filter
DFD005	\$ 220.00	£ 138.60	€ 204.60	¥ 2,101.00	Rhodamine Dichroic Filter

Save 10% By Ordering a Dye Filter Set:
Set includes one excitation, one emission, and one dichroic filter

ITEM#	\$	£	€	RMB	DESCRIPTION
FST001	\$ 594.00	£ 374.20	€ 552.40	¥ 5,672.70	Alexa 488 Filter Set (Set of 3)
FST002	\$ 594.00	£ 374.20	€ 552.40	¥ 5,672.70	GFP Filter Set (Set of 3)
FST003	\$ 594.00	£ 374.20	€ 552.40	¥ 5,672.70	CY3 Filter Set (Set of 3)
FST004	\$ 594.00	£ 374.20	€ 552.40	¥ 5,672.70	CY5 Filter Set (Set of 3)
FST005	\$ 594.00	£ 374.20	€ 552.40	¥ 5,672.70	Rhodamine Filter Set (Set of 3)