

# Filter Recommendations

## SPECTRA X LIGHT ENGINES®



### SINGLE-BAND DICHROICS AND EMISSION FILTERS

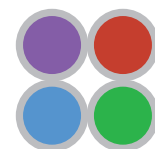
Lumencor's SPECTRA X light engine provides six independently controllable light sources that span the visible spectrum from 380–680 nm. Each SPECTRA X light engine comes equipped with a set of seven optical bandpass filters, providing the capacity to refine and tune the source outputs to meet experimental requirements. The filters are installed in removable paddles, allowing users complete flexibility in terms of purchasing and using filters in addition to the initially installed set. One filter is applied to each of the six solid state-light sources (violet, blue, cyan, teal, green+yellow and red).

Below find a list of single-band dichroic and emission filters that are recommended for imaging widely used fluorophores and fluorescent proteins on microscopes equipped with SPECTRA X light engines. Please speak to your Lumencor sales representative or contact [techsupport@lumencor.com](mailto:techsupport@lumencor.com) to confirm the best filter prescription for your application and experiment design.

Single-band dichroic and emission filter recommendations for Lumencor SPECTRA X light engines.

Fluorophores	SPECTRA X bandpass filters <sup>1</sup>	Chroma dichroic Chroma emitter	Semrock dichroic Semrock emitter
DAPI, Hoechst	390/22, 395/25	T425lpxr	FF409-Di03-25x36
		ET460/50m	FF02-447/60-25
CFP	438/29, 440/30	T455lp	FF458-Di02-25x36
		ET480/40m	FF01-483/32-25
GFP, FITC	470/24, 475/34	T495lpxr	FF495-Di03-25x36
		ET525/50m	FF01-525/45-25
YFP	510/10*	ZT514rdc	Di02-R514-25x36
		ET545/40m	FF01-542/27-25
TRITC, Cy3	542/33, 550/15	T565lpxr	FF562-Di03-25x36
		ET605/70m	FF01-593/40-25
mCherry	575/25, 575/35	T585lpxr	FF593-Di03-25x36
		ET630/75m	FF01-641/75-25
Cy5	631/28	T660lpxr	FF652-Di01-25x36
		ET700/75m	FF01-680/42-25
Cy7 <sup>+</sup>	740/13*	T760lpxr	FF757-Di01-25x36
		ET810/90m	FF02-809/81-25

Chroma filter sets are supplied by Chroma Technology Corporation, [www.chroma.com](http://www.chroma.com). Semrock filter sets are supplied by Semrock, Inc. (a subsidiary of IDEX Corporation), [www.semrock.com](http://www.semrock.com). <sup>1</sup>For a full list of Lumencor's standard bandpass filters for SPECTRA X light engines see [www.lumencor.com/filters-for-spectra-x-light-engines/](http://www.lumencor.com/filters-for-spectra-x-light-engines/). Bandpass filters are identified by center wavelength (CWL)/full width at half maximum (FWHM) in nm or CWL/guaranteed minimum bandwidth (GMBW) in nm if marked\*. + Requires SPECTRA X with near-IR source option.



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## FILTER RECOMMENDATIONS (CONT.)

### MULTI-BAND DICHROICS AND EMISSION FILTERS

Use of multi-band filter sets for fluorescence microscopy inevitably requires compromises in terms of discrimination between individual fluorophores. Simultaneous excitation of two, three or four fluorophores using a full multi-band filter set (i.e. multi-band exciter, multi-band dichroic and multi-band emitter) may produce unacceptable levels of detection channel cross-talk, particularly in applications involving colocalization analysis. When higher levels of inter-channel discrimination are required, the most common technical solution is sequential excitation through filter sets with multiple single band exciters feeding into a multi-band dichroic and a multi-band emitter (often referred to as Pinkel sets). The facility to selectively turn the SPECTRA X light engine's six solid-state light sources on and off allows users to excite two, three, four or more fluorophores in a multi-labeled specimen one at a time. Thus the functionality of a Pinkel filter set can be obtained without the need for mechanical filter interchanges using filter wheels or other positioning devices. Higher switching speeds are attainable and variances associated with moving parts are eliminated. Below find a list of multi-band dichroic and a multi-band emitters that are recommended for imaging widely used fluorophore and fluorescent protein combinations on microscopes equipped with SPECTRA X light engines.

Multi-band dichroic and emission filter recommendations for Lumencor SPECTRA X light engines.

Fluorophores	SPECTRA X bandpass filters <sup>1</sup>	Chroma dichroic Chroma emitter	SPECTRA X bandpass filters <sup>1</sup>	Semrock dichroic Semrock emitter
CFP/YFP	-	- -	434/17*, 510/10*	FF440/520-Di01-25x36 FF01-464/547-25
GFP/mCherry	470/24, 575/35	59022bs 59022m	485/25, 575/35	FF505/606-Di01-25x36 FF01-524/628-25
DAPI/FITC/ Texas Red	395/25, 485/25 575/35	69002bs 69002m	395/25, 475/34 575/35	FF409/493/596-Di01-25x36 FF01-432/523/702-25
DAPI/FITC/ TRITC/Cy5	395/25, 485/25 550/15, 640/30	89100bs 89101m	395/25, 470/24 550/15, 640/30	FF409/493/573/652- Di01-25x36 FF01-432/515/595/730-25

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### GET IN TOUCH

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