Filter Set Recommendations
SOLA LIGHT ENGINES®

lumencor®

SINGLE-BAND FILTER SETS

Lumencor's SOLA SE and SOLA SM light engines® generate continuous output from 380 to 680 nm, providing efficient excitation of most common fluorophores and fluorescent proteins. For fluorescence microscopy applications, excitation and emission bandpass filters and dichroic beamsplitters are all installed external to the light engine.

Below find a list of single-band filter sets that are recommended for imaging widely used fluorophores and fluorescent proteins on microscopes equipped with SOLA light engines. Please speak to your Lumencor sales representative or contact techsupport@lumencor.com to confirm the best filter prescription for your application and experiment design.

Single-band filter set recommendations for Lumencor SOLA SE and SOLA SM light engines.

SOLA Light Output	Fluorophores	Chroma Filter Set	Semrock Filter Set
Violet (380-410 nm)	DAPI, Hoechst	49028	DAPI-5060C-000[1]
Blue (420-450 nm)	CFP	49001 - ET - ECFP	CFP-2432C-000
Cyan (460-490 nm)	GFP, FITC	49002 - ET - EGFP (FITC/Cy2)	FITC-3540C-000
Teal (500-520 nm)	YFP	49003 - ET - EYFP	YFP-2427B-000
Green (525-570 nm)	TRITC, Cy3	49004 - ET - Cy3/TRITC	Cy3-4040C-000
Yellow (570-600 nm)	mCherry	49008 - ET - mCherry, Texas Red	mCherry-B-000
Red (620-660 nm)	Cy5	49006 - ET - Cy5	Cy5-4040C-000

Chroma filter sets are supplied by Chroma Technology Corporation, www.chroma.com. Semrock filter sets are supplied by Semrock, Inc. (a subsidiary of IDEX Corporation), www.semrock.com. [1]This filter set is also suitable for use with SOLA light engines equipped with a 365 nm ultraviolet light source in place of the violet source in other SOLA models. Both SOLA SE 365 and SOLA SM 365 light engines are available.

MULTI-BAND FILTER SETS

Use of multi-band filter sets for fluorescence microscopy inevitably requires compromises in terms of discrimination between individual fluorophores. A full multi-band set (i.e. multi-band exciter, multi-band dichroic and multi-band emitter) may result in unacceptable levels of detection channel cross-talk, particularly in applications involving colocalization analysis. In other applications, multi-band filter sets in combination with Lumencor's SOLA SE and SOLA SM light engines and a color camera provide a simple configuration for high-speed simultaneous acquisition of multicolor fluorescence images. Below find a list of full multi-band filter sets that are recommended for imaging widely used fluorophore and fluorescent protein combinations on microscopes equipped with SOLA SE and SOLA SM light engines. When higher levels of inter-channel discrimination are required, filter sets with multiple single-band exciters and a multi-band dichroic and a multi-band emitter (often referred to as Pinkel sets) are recommended.

Lumencor's SPECTRA X light engines provide the best platform for multi-band analysis using single exciters as filter interchange is accomplished entirely by electronic switching and is therefore faster and more robust than mechanical interchanges using filter wheels or other positioning devices.

Multi-band filter recommendations for Lumencor SOLA SE and SOLA SM light engines.

Fluorophores	Chroma Filter Set	Semrock Filter Set
CFP/YFP	59017 - ET - ECFP/EYFP	CFP/YFP-A-000
GFP/mCherry	59022 - ET - EGFP/mCherry	FITC/TxRed-A-000
DAPI/FITC/Texas Red	69002 - ET - DAPI/FITC/Texas Red	LF405/488/594-A-000
DAPI/FITC/TRITC/Cy5	89401 - ET - DAPI/FITC/TRITC/CY5 Quad	LED-DA/FI/TR/Cy5-A-000

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