

Bandpass Filters for BioDocAnalyze Systems

High-Grade Filters for Different Dyes

For the documentation of UV fluorescent images a bandpass filter has to be attached in front of the camera lens. The filter has to be chosen in respect to the applied sample staining. The most commonly used filter has a transmission maximum of 590 nm and fits e. g. to ethidium bromide, Oriole™, SYPRO® Orange and SYPRO® Ruby staining. This filter is supplied as standard in BDA systems.

An alternative filter is available for fluorescent dyes with emission wavelengths between 500 and 580 nm, e. g. for SYBR® Green, SYBR® Gold, SYBR® Safe and GelStar®.

Optimal results with every dye are always achieved with the respective dedicated filter. Nevertheless it is possible to apply a bandpass filter with a wider bandpass which covers several dyes with different emission maxima. This might be helpful when a stand or a darkhood without filter wheel is used. Biometra offers such a bandpass filter with wide bandpass: filter BP590/200. It can be used together with a Biometra standard transilluminator UVstar as this comes with a high-grade filter for low background signal. To achieve an even more high-contrast image with the wide bandpass filter it is recommended to choose the Super Brilliant version of UVstar, one of the "UVstar plus" transilluminators.




Chart of performance for the most commonly used fluorescent dye ethidium bromide

Bandpass filter	UV transilluminator	Performance (low background, bright sample signal)	Filter Order No.
BP590	UVstar plus	+++	034-011
	UVstar	++	
BP590/200	UVstar plus	++	034-015 resp. 034-016*
	UVstar	+	

Standard delivery in BDA systems: bandpass filter BP590 and transilluminator UVstar.

* For details please see "BioDocAnalyze Systems, Order Information".

UV fluorescent dyes and their compatible bandpass filters

Filter Transmission range	Compatible dye	Emission maximum	Filter Order No.
BP590, 565 – 615 nm Included in BDA systems 	For nucleic acids:		034-011
	Ethidium bromide	595 nm	
	Gel Red™	605 nm	
	For proteins:		
	Oriole™	604 nm	
	SYPRO® Orange	570 nm	
SYPRO® Ruby	610 nm		
BP540/80, 500 – 580 nm Order separately 	For nucleic acids:		034-012
	GelGreen™	525 nm	
	GelStar®	527 nm (RNA: 532 nm)	
	SYBR® Gold	537 nm	
	SYBR® Green I	521 nm	
	SYBR® Green II (for RNA)	521 nm	
	SYBR® Safe	530 nm	
BP590/200, 490 – 690 nm Included in BDA live plus systems or order separately 	For nucleic acids and proteins:		034-015 resp. 034-016 *
	All dyes compatible with filter 034-011 and 034-012, see above, and additionally:		
	For proteins:		
	SYPRO® Red	630 nm	
	For proteins, on Western Blots:		
WesternDot™ 625 with Qdot® nanocrystals	625 nm		

* Application of bandpass filter BP590/200:

With BDA Box 2/3, in filter wheel:	Insert 034-016 (= filter 034-015 + adapter ring + sealing ring) directly in the filter wheel.
With BDA Box 1 or with stand	With BDAvideo and BDA live: Screw filter 034-015 directly to the camera zoom lens.
	With BDAdigital: Screw filter 034-015 with adapter ring 034-019 (58 – 55 mm) to the lens adapter.
With BDAdigital compact hood BDR1	Screw filter 034-015 with adapter ring 034-019 (58 – 55 mm) to the lens adapter.