

Spark[®]

Fluorescence filters.



The listed fluorescence filters are suitable for Spark multimode readers equipped with fluorescence filter optics.

Wavelength (Bandwidth)	Wavelength (Bandwidth)	Wavelength (Bandwidth)
280 nm (15 nm)	485 nm (20 nm)	590 nm (10 nm)
320 nm (25 nm)	495 nm (10 nm)	590 nm (20 nm)
340 nm (10 nm)	505 nm (20 nm)	595 nm (35 nm)
340 nm (20 nm)	510 nm (10 nm)	610 nm (20 nm)
340 nm (35 nm)	510 nm (25 nm)	612 nm +/- 2 nm (10 nm)
360 nm (35 nm)	520 nm (10 nm)	620 nm (10 nm)
380 nm (10 nm)	530 nm (25 nm)	620 nm (20 nm)
380 nm (20 nm)	535 nm (10 nm)	625 nm (35 nm)
400 nm (20 nm)	535 nm (25 nm)	635 nm (35 nm)
415 nm (20 nm)	535 nm (35 nm)	665 nm (8.5 nm)
420 nm (10 nm)	540 nm (25 nm)	670 nm (25 nm)
430 nm (20 nm)	544 nm (25 nm)	670 nm (40 nm)
430 nm (35 nm)	550 nm (10 nm)	680 nm (30 nm)
448 nm (7 nm)	560 nm (10 nm)	720 nm (40 nm)
460 nm (10 nm)	560 nm (20 nm)	740 nm (25 nm)
460 nm (20 nm)	580 nm (20 nm)	
465 nm (35 nm)	580 nm (30 nm)	



How to select a suitable filter pair for a fluorescent dye

- 1) Obtain the excitation and emission maxima from the dye's data sheet, suitable literature or database (eg. https://www.nightsea.com/sfa-sharing/fluorescence-spectra-viewers*).
- 2) Select filters with wavelength properties (WL + BW) covering the excitation or emission maxima.
- 3) Check the filter selection for spectral overlap using the following formula:

$$WL_{EM} - BW_{EM} - WL_{EX} - BW_{EX} = \geq 5 \text{ nm}$$

WL = Wavelength of the filter EX = Excitation

BW = Bandwidth of the filter EM = Emission

At least 5 nm distance is recommended between the upper end of the spectral range of the excitation filter ($WL_{EX} + BW_{EX}$) and the lower end of the spectral range of the emission filter ($WL_{EM} - BW_{EM}$).

- 4) Evaluate and validate the selected filters for your specific assay and use.

If no suitable filters are available in the list, please contact your local Tecan sales representative.

Example: fluorescein

- Excitation maximum: 489 nm
- Emission maximum: 517 nm
- Recommended excitation filter: 485 nm (20 nm)
- Recommended emission filter: 535 nm (25 nm)

$$535 - 25 - 485 - 20 = \geq 5 \text{ nm}$$

The recommended filters for fluorescein cover the respective maxima (excitation and emission), and show the recommended minimal spectral distance of 5 nm.

Important information:

Instrument measurement specifications are tested and validated for specific dyes and filters only, as stated in the instructions for use for the instrument. Measurement limits may be different for other dyes and filters. Users must always independently evaluate and validate the suitability of filters for their intended use.

* Please note that Tecan is not responsible for the content of this webpage.

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