Changing Optical Filter Sets

Filter sets for use with some of the most commonly employed fluorescent dyes are available for the KinExA®. Multiple filter sets provide flexibility when choosing labels used for detection. A list of the wavelengths and bandwidths provided by the dichroic mirror, emission filter, and excitation filter of each factory available set is provided in *Table 1*, and a list of appropriate dyes is provided in *Table 2*. If you wish to work with a dye that is not listed in *Table 2*, call Sapidyne Instruments to learn about an appropriate filter set for your needs.

Exchanging Filter Sets

1. After removing the optics cover, the excitation filter can be removed by grasping the exposed handle (***Figure 1***). **AVOID TOUCHING LENSES ON THE FILTERS AND DICHROIC MIRROR AS THIS MAY CAUSE DAMAGE.** Upon removal, place each filter set component in its appropriate storage box. Identifying wavelengths are printed on each filter/mirror handle and storage box.

2. Open the flow cell reflector and gently move the flow cell over the reflector to the left. There is no need to disconnect the plumbing. Remove the optics slide retention nuts and gently pull to remove the optics slide from the instrument (see ***Figure 1*** to identify parts).

3. Remove the dichroic mirror and emission filter from the optics slide (***Figure 2***), and place them into their storage boxes.

4. Insert the components from the desired filter set into the appropriate slots. The components have different sizes and can only fit into their corresponding positions.
Note: *Each slide is labeled with an arrow and it is important to position each slide such that the arrow is pointing toward the flow cell.*

5. Return the optics slide to the instrument, replace the optics slide nuts, and return the flow cell to the grooved lens. Slide the retention clip to the left to secure the flow cell.
Note: *Apply a small amount of dielectric grease to the grooved lens before replacing the flow cell.*

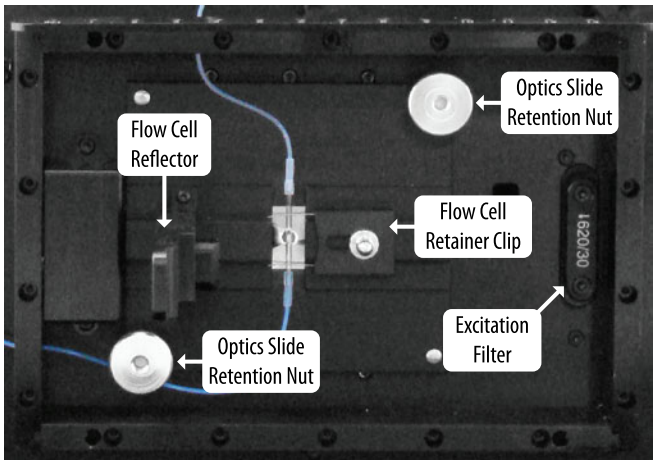

Figure 1. *Arrows indicate the flow cell retainer clip, optics slide retention nuts, flow cell reflector pin, and excitation filter.*

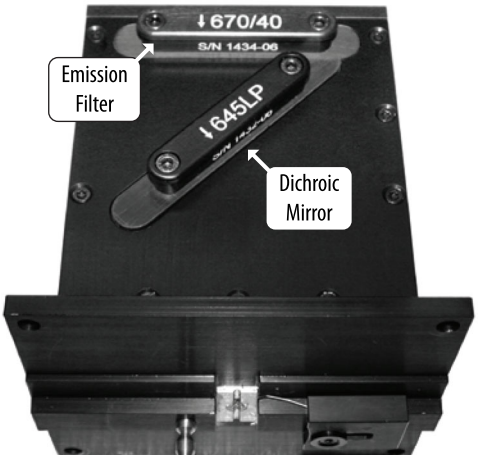

Figure 2. *The optics slide removed from the instrument. Arrows indicate the dichroic mirror and emission filter.*

Color	Dichroic Mirror	Emission Filter	Excitation Filter	Part Number (Set)
Blue	505 LP	535/40	480/30	544125
Green	560 LP	605/55	535/30	544290
Yellow	600 LP	630/30	580/30	544361
Orange	620 LP	660/45	595/40	544386
Red	645 LP	670/40	620/30	544413

Table 1. Wavelengths and bandwidths provided by the dichroic mirror, emission filter, and excitation filter of each filter set.

Filter Set	Dye	Dye Absorption Max (nm)	Dye Emission Max (nm)
Blue	FITC	492	520
Blue	ATTO 488	501	523
Blue	Alexa 488	495	519
Green	B-Phycoerythrin	546, 565	575
Green	Cy3	550	570
Green	R-Phycoerythrin	480, 546, 565	578
Green	TRITC	550	570
Green	ATTO 550	554	576
Yellow	Alexa 594	590	617
Yellow	ATTO 590	594	624
Orange	ATTO 611X	611	681
Orange or Red	Allophycocyanin	650	660
Red	Cy5	650	670
Red	Dylight 649	650	670
Red	Alexa 647	650	665
Red	ATTO 647	645	669

Table 1. Appropriate filter sets to use with common dyes.