

Note to users:

Information about this microscope and its use is available on <http://www.microscopyu.com>

The following filter sets are in place:

**1. Ultraviolet excitation filter block UV-2E/C:**

**Excitation Wavelength:** 340-380 nanometers (360 CWL)

**Dichroic Mirror Wavelength:** 400 nanometers (LP)

**Barrier Filter Wavelength:** 435-485 nanometers (460 CWL)

The **UV-2E/C** combination is designed as a sharp cutoff filter block for ultraviolet fluorescence. Filters are the soft-coated type intended to generate a high signal/noise ratio. The narrow band pass barrier filter utilized in this combination is designed to cut off green and red visible wavelengths. Specific applications include the following chromophores: 4',6-Diamidino-2-phenylindole (DAPI; cutting off FITC (green) and TRITC (red)), Hoechst 33258/33342, Cascade Blue, and 7-amino-4-methylcoumarin-3-acetic acid (AMCA).

**2. Blue excitation filter block B-1A; HYQ FITC:**

**Excitation Wavelength:** 460-500 nanometers (480 CWL)

**Dichroic Mirror Wavelength:** 505 nanometers (LP)

**Barrier Wavelength:** 505-560 nanometers (535 CWL)

The **B-1A; HYQ FITC** combination is designed to have a narrower excitation range than the **B-2A** filter set. Like the **B-2A** filters, the **B-1A; HYQ FITC** set is designed to maximize the emission of FITC when used with a counter stain such as propidium iodide (PI) or tetramethyl rhodamine isothiocyanate (TRITC). Applications include the following chromophores: fluorescein isothiocyanate (FITC), acridine orange (AO), auramine O, coriphosphine O, Bodipy, Fluo-3, and oxacarbocyanine dyes (DIO).

**3. Filter Block HYQ Texas Red:**

**Excitation Wavelength:** 530-590 nanometers (560 CWL)

**Dichroic Mirror Wavelength:** 595 nanometers (LP)

**Barrier Wavelength:** 610-690 nanometers (650 CWL)

The **HYQ Texas Red** filter combination is designed to increase the brightness of secondary fluorescence without producing a corresponding increase in the signal-to-noise ratio. Steeper passbands are created by increasing the number of interference cavities in both the excitation and emission filters, allowing close proximity between filter spectra. The resulting wider and steeper filter spectra allow the set to provide more excitation energy and capture more fluorescence intensity. Application include the following fluorophores: Texas Red, TR-X and Alexa 594.

**4. Multiband triple filter block DAPI-FITC-Rhodamine:**

**Excitation Wavelengths:** 380-400 (390 CWL), 470-490 nanometers (480 CWL), and 545-585 nanometers (555 CWL)

**Dichroic Mirror Wavelengths:** 425-470 nanometers (448 CWL), 500-540 nanometers (520 CWL), and 570 nanometers (LP)

**Barrier Wavelengths:** 450-465 nanometers (458 CWL), 510-540 nanometers (525 CWL), and 580-620 (600 CWL)

The **multiband DAPI-FITC-Rhodamine** filter combination is designed primarily for use with the chromophores DAPI, FITC, and Rhodamine. Other fluorochromes useful with this filter set are TRITC and Cy3. This combination contains a triple band filter set that enables the microscopist to view and image the emission of three or more fluorochromes simultaneously. The excitation filter is a dichromatic filter that contains three passbands, which excites the chromophores at three individual wavelength intervals. Emission filters are constructed in a similar manner to allow three passbands for simultaneous transmission of secondary fluorescence. Also utilized in this unique filter set is a polychroic beamsplitter that contains complementary reflection and transmission bands specific to the excitation and emission filters.