NEW: NOW SUPPORTED BY THE LAMBDA 10-3 WITH SPECIAL PROGRAMMING

NEW: PATENTED WHITE LIGHT OUTPUT CAPABILITY

WAVELENGTH RANGE AS WIDE AS 338-800NM

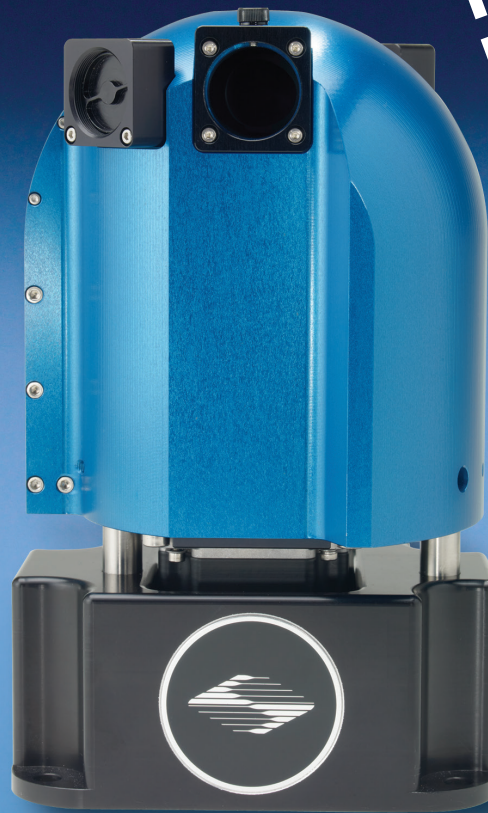**ACCESS ANY CENTER-WAVELENGTH IN NANOMETER INCREMENTS**

IMAGES PASS THROUGH FILTERS MAKING IT SUITABLE FOR BOTH EXCITATION AND EMISSION

EASILY SWITCH BETWEEN FLUOROPHORE COMBINATIONS

OPTIONAL LIQUID LIGHT GUIDE OFFERS ABSOLUTE VIBRATION ISOLATION

ALL THE ADVANTAGES OF THIN-FILM TECHNOLOGY – HIGH TRANSMISSION, STEEP SPECTRAL EDGES, HIGH OUT-OF-BAND BLOCKING

POLARIZATION INDEPENDENCE (S AND P NEARLY IDENTICAL)

LAMBDA VF-5™/VF-1™ TUNABLE FILTER CHANGERS

Sutter Instrument introduces two new filter changers specially designed for wavelength selection over a wide spectral range to any given nanometer value. The **Lambda VF-5™** and **Lambda VF-1™** employ the innovative VersaChrome® thin-film filter technology from Semrock® to provide outstanding bandpass characteristics such as high transmission (close to 100%), steep edges and out-of-band blocking. Since these filters pass an image, they are equally suitable for emission and excitation paths.

A specific wavelength within the wide spectral range of each filter is obtained by adjusting the angle of incidence from 0 to 60 degrees. This tuning causes little or no change in spectral performance of the filter regardless of the state of polarization of the light passing through the filter. The current VersaChrome series has 7 filters covering 338nm to 800nm. By simply selecting the desired center-wavelength on the controller, the **Lambda VF-5** automatically moves and tilts one of its 5 filters into position. Users can select any combination of filters offered by Semrock for the

Lambda VF-5 (which holds up to 5 filters) or any single filter in the series for the Lambda VF-1.

The **Lambda VF-5** has a patented white-light output mode that allows the user to access the full spectral output of the excitation light source when it is required. White-light ouput is achieved by capturing the rejected light from the VersaChrome filter at a 45 degree angle and then combines the two beams on the output side of the VF-5. If this configuration is desired it requires an additional custom light guide and SmartShutter® system.

When using the **Lambda VF-5** for emission applications, we suggest installation of the 5 filters with the longer center-wavelengths covering from 430nm to 800nm. For excitation applications, we suggest installing the 5 filters with the shortest wavelengths covering 338nm to 620nm. For special applications, any combination of 5 filters could be installed in the **Lambda VF-5**. The compact **Lambda VF-1** accepts any single filter in the series. These filters can be changed as needed.

The controller for these new tunable filter changers is a special version of our **Lambda 10-B**. Users can select the desired center wavelength in 1nm increments from the keypad, or via the serial or USB ports. In addition, we've installed a command set that is similar to that of the standard Lambda 10-B to allow the user to directly select the filter and angle in microstep increments. This allows control of the **Lambda VF-5** and **VF-1** with minimal changes to existing software supporting the popular Lambda 10-B controller. A sequence of wavelengths can be stored in the controller and the TTL input can then be used to trigger selection of the wavelengths in the sequence step-to-step. The firmware includes filter-specific data for each of the VersaChrome filters in the series.

The **Lambda VF-1** accepts any single filter in the series, which can be exchanged with other filters as needed. This model offers faster switching times as well as a more compact and affordable system. When used with the **Lambda VF-1**, the controller is able to also control a separate filter wheel or *Smart*Shutter.

BASIC SYSTEM

VF-1   Includes the Lambda VF-1™, a single
            VersaChrome® filter, controller unit, serial
            and USB cables, power cable and manual
VF-5   Includes the Lambda VF-5™, five
            VersaChrome filters, controller unit, serial
            and USB cables, power cable and manual

VERSACHROME® FILTERS

CO-O573380   Tunable filter, 338-380nm with 16nm bandwidth
CO-O573440   Tunable filter, 390-440nm with 16nm bandwidth
CO-O573490   Tunable filter, 440-490nm with 15nm bandwidth
CO-O573550   Tunable filter, 490-550nm with 15nm bandwidth
CO-O573620   Tunable filter, 550-620nm with 14nm bandwidth
CO-O573700   Tunable filter, 620-700nm with 13nm bandwidth
CO-O573800   Tunable filter, 700-800nm with 12nm bandwidth

ACCESSORIES

O629950   Male-to-male C-mount adapter for mounting
               *Smart*Shutter® to Lambda VF-5/VF-1
VF5-WL   White light kit for Lambda VF-5

VersaChrome® is a registered trademark of Semrock®

(Shown: Lambda VF-1)