NEW!

4 CHANNEL ULTRA HIGH SPEED LED LIGHT SOURCE (<25µSEC)

LIQUID LIGHT GUIDE CONNECTION TO ALL COMMON MICROSCOPES

CAPABLE OF COMBINING ANY COMBINATION OF LEDs OR ANY LIQUID LIGHT GUIDE DELIVERED LIGHT SOURCES

EASY TO RECONFIGURE

SUPPORTED IN NEARLY ALL 3rd PARTY SOFTWARE SUITES (DG COMMANDS)

ADVANCED CONTROL METHODS (USB, TTL, RINGER BUFFER)

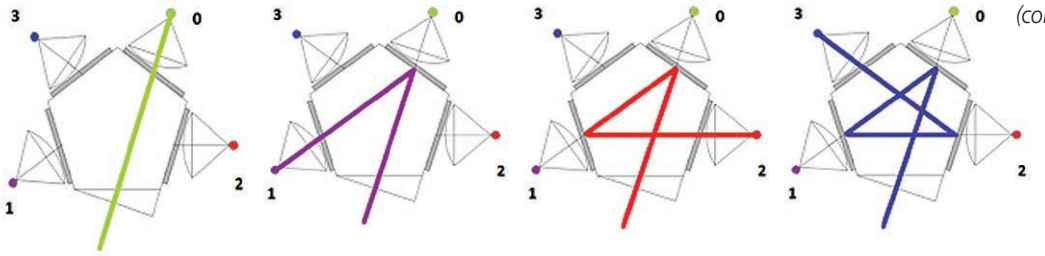
LAMBDA 421 BEAM COMBINING PENTAGON

The **Lambda 421** beam combiner is a new, patented, concept for combining separate light sources with different spectra into a single common output beam. Each separate light source is collimated before entering the optical path through a bandpass filter. The filters for each light source also function as mirrors that reflect the collimated beams from the previous light sources. In the diagram below the optical paths are outlined for each position including the reflections that occur:

Traditionally, combining more than two light sources required the use of a dichroic ladder. Dichroic mirrors, which switch from transmission to reflection at one point in the spectrum, allow the combining of separate light sources, provided that those sources do not have overlapping wavelengths. The downside of this approach is that light sources cannot be easily changed.

Dichroic ladders also demand careful attention to the order in which the light sources are introduced into the optical path, to avoid having the light blocked by the next dichroic in line. Typically, additional bandpass filters must be added in front of each light source before the dichroic, to select the desired range of wavelengths for each source. Each filter and dichroic used in the ladder decreases the total light output of the system.

(continued on back)



CE

RoHS 2 2011/65/EU

SUTTER INSTRUMENT®

One Digital Drive • Novato • CA 94949 • Phone 415.883.0128
Fax 415.883.0572 • Web www.sutter.com • Email info@sutter.com

MADE IN USA

10-2017

The **Lambda 421** was designed to keep the size of the beam combiner small, and the optical path short and efficient. Thin-film bandpass filters, such as Semrock's STR, reflect greater than 90% of out-of-band light. If the band pass of each light source does not overlap, it is possible to use the filters for both attenuation and reflection the light from the other sources. By arranging the filters and sources into a pentagon, we were able to combine four light sources, in a compact design, with lower losses than previously achievable. As an added benefit, the last position in the optical train does not require any filter, since no other input reflects from that position. This input can be used with any sort of light source as long as you are aware of the possible losses if there are filters in use that overlap this light source. The fifth side of the pentagon becomes the output for the combined sources. The filters are easily exchangeable and are installed on small sliders inside the core of the pentagon. Filters and associated light sources can be arranged in any order around the pentagon.

LAMBDA 421 OPTICAL BEAM COMBINER AND CONTROLLER

Includes Lambda 421 with liquid light guide, cables, and power cord. The instrument accepts up to 4 LED modules (listed below) and can easily be reconfigured. The LED modules consist of the LED and the appropriate Semrock®-STR excitation filter for the output of the LED.

LB-421-DG	Lambda 421 Optical Beam Combiner and controller

LED MODULES FOR LAMBDA 421

OBC-340	LED, 340nm for Optical Beam Combiner
OBC-365	LED, 365nm for Optical Beam Combiner
OBC-380	LED, 380nm for Optical Beam Combiner
OBC-385	LED, 385nm for Optical Beam Combiner
OBC-410	LED, 410nm for Optical Beam Combiner
OBC-440	LED, 440nm for Optical Beam Combiner
OBC-460	LED, 460nm for Optical Beam Combiner
OBC-480	LED, 480nm for Optical Beam Combiner
OBC-506	LED, 506nm for Optical Beam Combiner
OBC-530	LED, 530nm for Optical Beam Combiner
OBC-561	LED, 561nm for Optical Beam Combiner
OBC-590	LED, 590nm for Optical Beam Combiner
OBC-630	LED, 630nm for Optical Beam Combiner
OBC-660	LED, 660nm for Optical Beam Combiner
OBC-740	LED, 740nm for Optical Beam Combiner
OBC-850	LED, 850nm for Optical Beam Combiner
OBC-940	LED, 940nm for Optical Beam Combiner
OBC-W5	LED, White Light for Optical Beam Combiner