

ColorLock™ Filter Stacks

Precision Spectral Control with Durability and Wide Angle Performance



January 23, 2013 – San Clemente, CA. Reynard Corporation has introduced ColorLock™ filter stacks to their portfolio of innovated optical products. These filters utilize the transmission and blocking characteristics of two or more specialty designed filter glass types to produce a precision optical component with extreme wide-angle performance characteristics. Configurations include Band Pass, Long Wave Pass, Short Wave Pass, and custom arbitrary specifications in the ultra-violet (UV), visible, and near-infrared (NIR) spectral ranges.

The filters are designed using proprietary ColorLock™ software to identify the optical layer thickness prescription and simulate a spectral response. The individual constituents are each fabricated to tight thickness tolerances and then bonded together to eliminate internal boundary Fresnel loss. The stacked filter is then finished with high-precision surface quality, sub-wavelength surface flatness, and minimal transmitted wavefront error.

The result is an optical filter, up to 6-inches in size, which can be utilized over very wide-angle variations, from 0° to +/-50°, without any spectral shift (a.k.a. 'blue-shift') and negligible loss in transmission. Very wide, out-of-band blocking is achieved by the inherent absorbing characteristic of the glass, achieving blocking densities better than OD10.

“ColorLock™ filter stacks are the only option for instruments requiring pinhole-free, consistent color over very wide viewing angles. They routinely pass the most stringent environmental durability tests such as severe abrasion and salt-fog. Additionally, filters have been tested over MIL-SPEC temperature and humidity ranges, without any signs of degradation or delamination,” says Randy Reynard, President of Reynard Corporation.

The applications for ColorLock™ filter stacks are vast; wherever there is a need for color stability and wide-angle imaging such as in machine vision, metrology instruments, and color sensing/correction. The filters can be used for laser safety and blocking, as well as for laser clean-up to remove unwanted harmonics or spurious noise. For fluorescence, these filters can offer high contrast between the peak



emission intensity over the excitation intensity. Specific performance values can be customized, or standard values can be defined, such as DAPI, FITC, Alexa Fluor 568, etc.

About Reynard Corporation

Established in 1984, Reynard Corporation designs and manufactures precision thin film optical products for a global customer base, both military and commercial. In-house operation capabilities include design, fabrication, photolithography, coating, and sub-assembly for a one-stop solution. Contact us at sales@reynardcorp.com, or visit our webpage for online ordering and reference at www.reynardcorp.com, 949-366-8866.