

Media Release

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ICG Filters for medical endoscopy

Dielectric filter solutions help shape the endoscopy landscape of tomorrow

Since its development in the 1950s ICG (Indocyanine green) has become an important dye in fluorescence analysis techniques. In recent years it has proven to be the best marker in a broad range of medical applications, from cardiology to ophthalmology, as well as being important for endoscopy techniques. The use of endoscope-integrated ICG technology will greatly expand surgeons' diagnostic spectrum during minimally invasive surgeries.

However, with ICG, excitation and emission spectra lie close together, often leading to the excitation light being detected together with the emission signal. Since the excitation intensity is much stronger than the actual fluorescence response the image quality may be affected. Standard off-the-shelf fluorescence filters can therefore struggle to fulfill the challenging requirements for ICG usage.

Optics Balzers offers high-end optical filter solutions, customized to your spectral design requests and able to meet the different requirements set by each ICG application. Highly precise cut-on and cut-off wavelengths can be tuned to maximize the efficiency of your optical setup, while steep spectral edges ensure optimal separation between excitation and emission signals. In addition, superb out-of-band blocking of greater-than OD6 is achieved by using dielectric thin-film filters, ensuring excellent environmental stability. This has been rigorously tested in accordance with MIL-STD-810F, MIL-C-48497A, MIL-C-675C, as well as DIN ISO 9022. Our sophisticated plasma-assisted reactive magnetron sputtering (PARMS) coating technology also allows for transmission values of more than 95%.

In order to further support our customers in their high-end endoscopy techniques, Optics Balzers offers multiple, complementary filter solutions. In addition to our best-in-class ICG filters, we also offer AR coatings, allowing for an increased optical signal, along with solderable coatings for the hermetic sealing of exit windows.

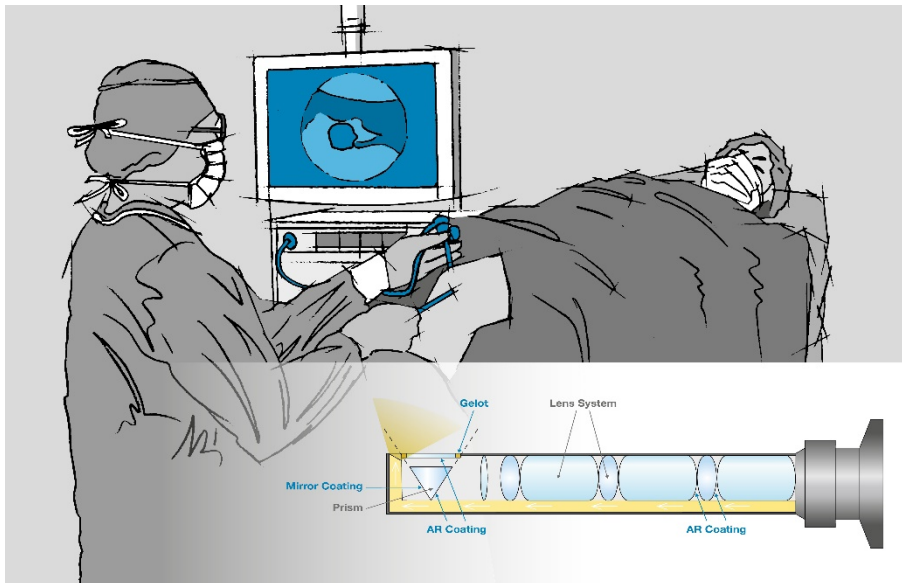


Fig: Recent developments in endoscope-integrated technology will greatly expand surgeons' diagnostic capabilities during minimally invasive surgeries

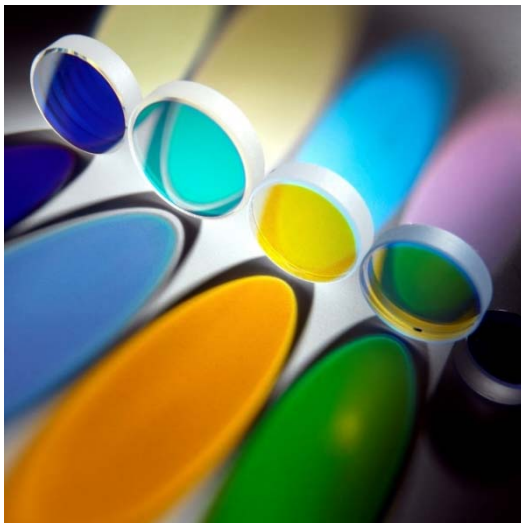


Fig: The high-end, deep blocking excitation and emission filters offered by Optics Balzers

Optics Balzers, a Liechtenstein-based high-tech company, has been the preferred provider of innovative optical coatings and solutions for more than 70 years. Together with its subsidiaries in Jena (Germany) and Penang (Malaysia), Optics Balzers is a global leader in the supply of optical coatings and components. The company focuses on select markets such as Life Sciences, Consumer, Space, Automotive and Lighting. The products and services offered range from optical coatings and glass processing, patterning and bonding technologies, to the manufacture of complete optical sub-assemblies, and are acknowledged as being unique worldwide.

Additional information: www.opticsbalzers.com