

SUCCESS STORY

CUSTOM DESIGNED OPTICAL SYSTEMS FOR CYTOMETRY INSTRUMENTS



SWISSOPTIC
A member of the JENOPTIK Group

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INTRODUCTION

Imaging cytometry is evolving and becoming more important for cell research and diagnostics. There are more and more applications and instruments being developed in this important area of bio sciences. Along with this comes a need for the development of new optical hardware. Driven by specific requirements to match new bio-markers and fluorochromes, optical performance enhancements are needed such as better chromatic correction, increase in working distance and sensitivity. The original approach was to use «off the shelf» objectives as a practical solution from a cost and availability standpoint. But, this solution often requires significant compromises in performance in areas such as transmittance and depth of field. With solutions from SwissOptic this is no longer the case.

OUR SOLUTION

Rigorously addressing the specific needs, SwissOptic can redesign the optical path. We choose glass with optimized transmission, design suitable coatings, and use a compact design omitting the need for a tube lens and a c-mount. In recent customer specific designs we have been able to reduce the number of lenses compared to the original layout based on standard optics. The reduction of optical interfaces together with our optimized UV coating design lead to a significant increase in sensitivity. The higher transmission allowed us to use a lower NA, increasing the DOF and FOV as desired. The mechanical redesigns lead to much less complicated assembly processes and longer durability reducing the need for future service calls.

SUMMARY OF ADVANTAGES AND PERFORMANCE IMPROVEMENTS

- ▶ Greater DOF, larger FOV and higher light efficiency
- ▶ Significantly reduced service cost thanks to increased UV durability
- ▶ Less assembly and adjustment steps in production thanks to reduction of mechanical interfaces
- ▶ Slimmer setup
- ▶ Full customer support, including documentation, production, and functional testing



Cytometry instruments enable the fast analysis of cells

SWISSOPTIC IS THE RIGHT PARTNER FOR YOU BECAUSE

- ▶ We have decades of experience in product development for medical devices, we know the processes in medical device and the product requirements
- ▶ We take on responsibility for the complete system, and we can provide the complete production chain including assembly, integration of electronics, and operational testing
- ▶ We provide competitive advantages through fast time-to-market and excellent project management
- ▶ We look at the entire optics related value chain and uncover cost advantages for you
- ▶ We have state of the art production sites in Switzerland, Germany and China