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CASE STUDY

Industry:
Plasma Screening

Solution/Application:
Serology Testing

Advancing blood safety with high sensitivity immunoassays

Overview

One of the world's leading providers of plasma screening and blood plasma-based products has approached Volpi to develop and manufacture a multi-channel optical reader for highly sensitive multiplex immunoassays.



Objective

The company came to Volpi to help it better position itself in serology and advance its market position in plasma screening by achieving the sensitivity of expensive nucleic acid testing (PCR) through the development of an innovative technology. The technology brings about comparably affordable immunoassays that help detect pathogens quickly via high-throughput instruments to be used by blood and plasma screening in plasma/blood screening centers.

The goal is to produce a lower-cost, higher-performing, more available blood testing alternative to traditional PCR – all enabled by Single Molecule Counting technology.

The technology will be expanded to at least three fluorescence channels with an ultra-low limit-of-detection in the femtomolar range in multiplex-assays for the early detection of infectious diseases. For high throughput, the available read time per sample is fast, around a few seconds.

Through this advancement, the company intends to strengthen its leading position in the serology screening of plasma and blood with its own technology, complementing its market-leading position in the screening of plasma using NAT.



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About Volpi

We improve patient's lives through light-created insights. Volpi helps healthcare professionals make more informed treatment decisions by delivering innovative optoelectronic solutions that enhance the performance of the diagnostic instruments used to research and diagnose disease.

With offices in the US and Switzerland, and clients around the globe, Volpi works with the world's best-known and most respected Life Sciences and Diagnostics instrument manufacturers.

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Solution

Volpi's solution relies on its expertise in confocal laser microscopy and systems engineering, combined with Single Molecule Counting technology), that enables:

- Multiplexing capability for least 3 optical channels at a single digit femtomolar level sensitivity.
- Design for high instrument run-time, resulting in 41,000 hours of total measurement time per instrument and year, based on an estimated sample quantity
- Includes an innovative, embedded intelligence with in-line data processing that speeds up performance and enables remote monitoring and service for optimal uptime and availability

