

COVID-19 MASSIVE TESTING PROCESS

THE EXTREME IMPORTANCE OF POWERFUL LIGHTING IN QUALITY CONTROL – LABMAN

Founded in 1979, Labman Automation produces world leading customer laboratory automation and products.

Labman contacted TPL Vision for assistance as they needed **a high brightness illumination for their Rapid Sample Reformatter**; a system specially designed for the high throughput sub-sampling of large volumes of COVID-19 test samples from capped vials into well plates for analysis.

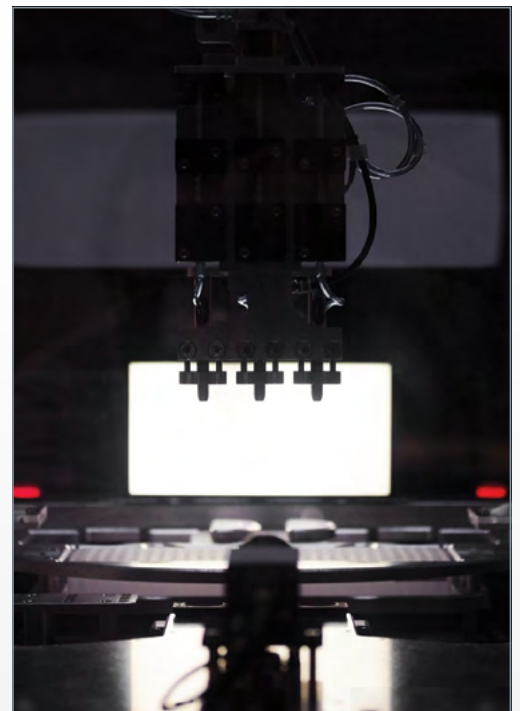
Labman needed a powerful, high brightness backlight, that could help them solve a few challenges. See below why TPL Vision's SBACK II was chosen to successfully tackle those challenges:

■ Labman required a very thin yet powerful backlight, as the space dedicated to the illumination was limited

The SBACK II is a thin backlight with extremely narrow borders so it was very easy to integrate into the system. Integrated behind the clear pipette tips, the SBACK II highlights the global shape of the tips, enabling the verification of liquid level and any drips present. This is extremely important to remove cross contamination worries and improve productivity in the laboratories.

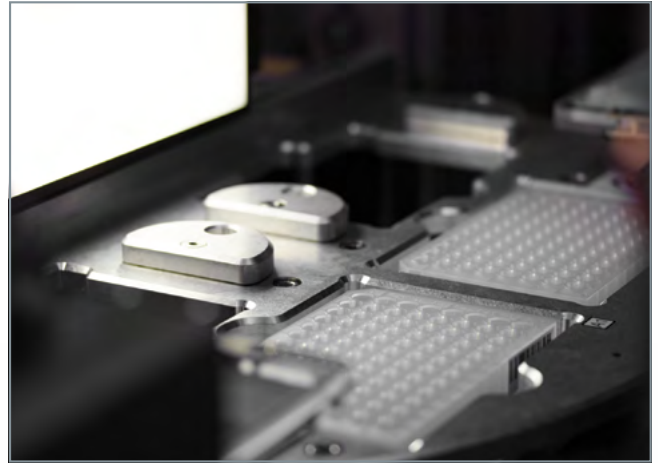
■ The necessity to work in a continuous operation, day and night

Due to the emergency character of the COVID-19 situation, a powerful, long lasting illumination was crucial to permit operating continuously. The SBACK II can operate in strobe mode, which allows to better control the temperature of the LEDs, thus allowing a continuous 24/7 operation. Strobing also extends the product's lifetime.



Reducing the risk of error was paramount, quality control needed to be absolutely rigorous

We know that high speed production lines are a challenge for many machine vision and robotics applications, you need to ensure that no feature of the part you are inspecting moves more than a single pixel of the camera's field of view to avoid image blur. TPL Vision's machine vision engineers worked with Labman to fully understand the system's setup and operation prior to recommending the optimum illumination solution for the application.



Be able to illuminate a large field of view

In order to ensure a quick inspection of thousands of vials per day, 3 pipette tips were inspected at the same time. It can be tricky to create homogeneity over the whole working area, especially if this working area is large. The SBACK II provides a consistently high homogeneity over the whole illumination surface, thus ensuring consistent imaging results are obtained, no matter where the samples are located in the field-of-view. As a result of this high homogeneity, the three samples imaged at once had the same image quality and contrast across the full field of view.

The urgency of the situation; Labman needed a quick solution

TPL Vision maintains a large stock of products available for loan to our partners to aid rapid feasibility testing. Labman received the free evaluation loan equipment the day after the loan confirmation, directly shipped from our factory to Italy, and were quickly able to determine that the solution was well suited for their application. TPL Vision provides a short lead time of just 4-10 days for over 30,000 part numbers (for quantities of up to 5 pieces).

THE RESULT:

The Rapid Sample Reformatter is now successfully inspecting at a speed where the human inspector cannot keep up. By automating this process they are now able to **inspect up to 20,000 samples per day**. The full process originally required 16 people to inspect; now, only 2 people are present to control the machine.

Further to this, Labman have begun improving the system such that 4 samples can be inspected at once, resulting in **a higher throughput** thanks to the larger backlight provided by TPL vision.