



Advanced vision system driven by
Artificial Intelligence for automated,
in-line lipstick inspection.



A-EYE

LIPSTICK



WE BRING TO LIFE NEW, ADVANCED TECHNOLOGIES THAT ARE CAPABLE OF OPENING NEW HORIZONS

Innovation has always been part of SEA Vision's DNA and is still the key driver for our work, leading us towards the future through continuous experimentation.

Our software supports life science companies in producing safe and traceable products and boosts the quality and efficiency of their processes.

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FLAWLESS QUALITY

Currently, lipstick inspection relies on human operators, a subjective and time-consuming process.

To streamline quality control, we've introduced **a-eye lipstick**, automating the process to ensure **flawless quality across 100% of lipstick production**.

ABOUT LIPSTICK

Lipstick is a sophisticated product, featuring various finishes, textures, colours, logos, and lettering, often crafted with meticulous attention to detail as a work of art.

However, defects can occur during production due to factors like formulation, temperature, and machinery setup.

A-eye lipstick **identifies every defects** and ensures **meticulous quality assessment** throughout the manufacturing process.

AI-POWERED VISION SYSTEM

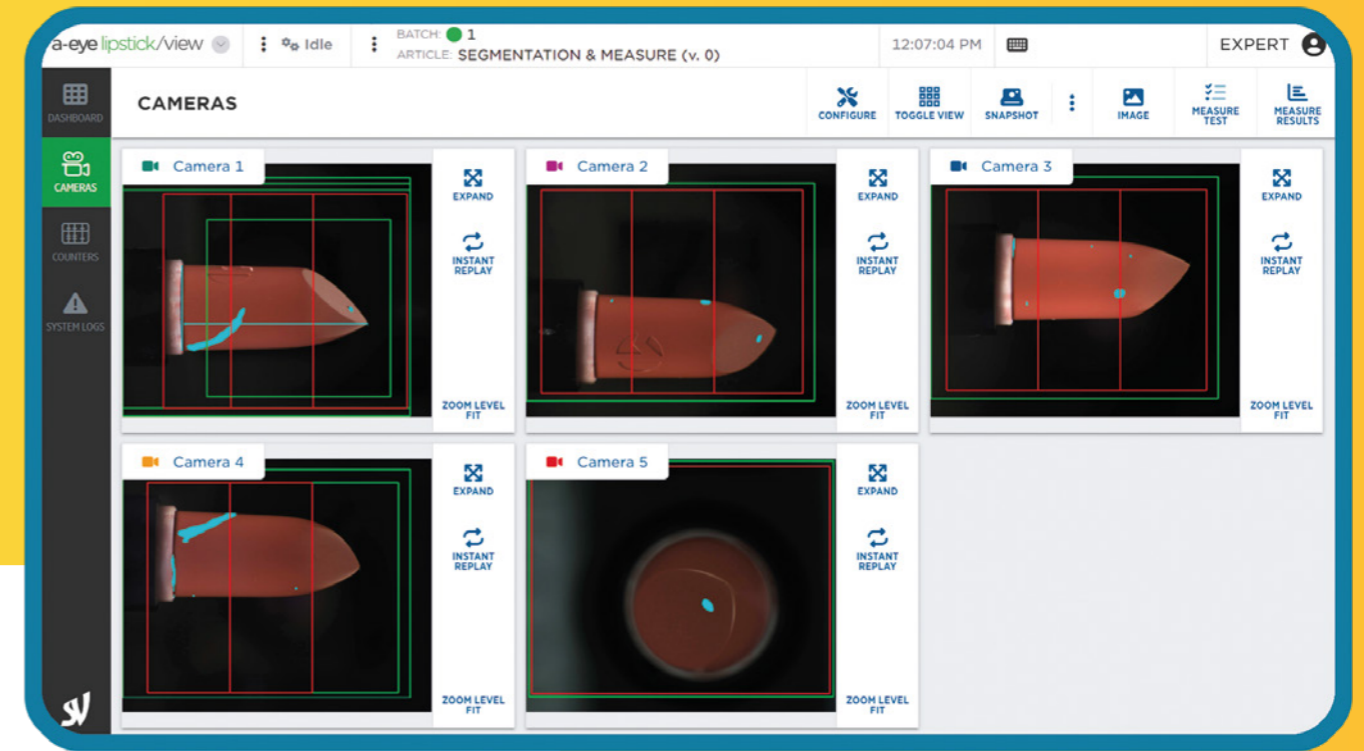
A-eye lipstick is an advanced vision system driven by Artificial Intelligence for **automated, real time in-line lipstick inspection**. Integrating top-tier hardware with proprietary software and algorithms ensures meticulous quality assessment throughout the manufacturing process.



The system cameras **capture 360-degree images of the lipstick, with a particular focus on the tip**. Rigorous software analysis examines these images in detail, dissecting various lipstick components, evaluating product attributes, and **identifying defects**. Users can customize the level of control by adjusting **acceptance criteria** to meet specific production requirements. The system then communicates with the production machine to **automatically reject products** that do not meet the defined criteria.

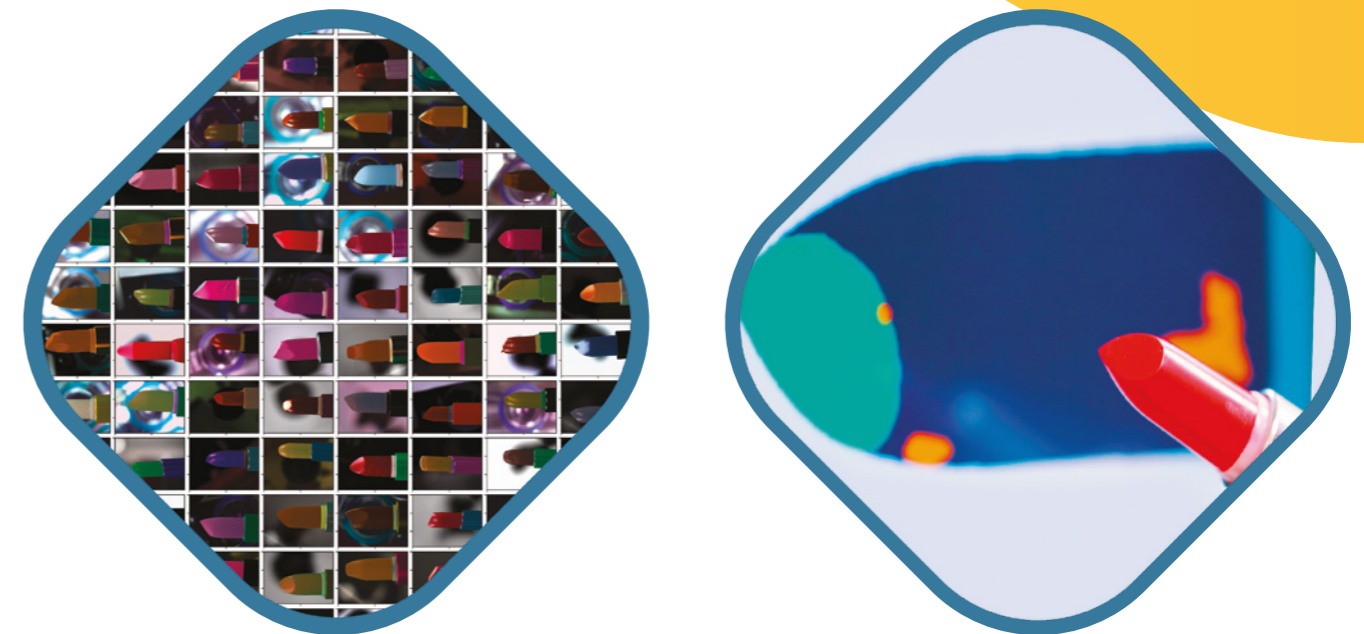
SOFTWARE

A-eye lipstick marks a revolutionary stride in quality control for lipsticks, achieved through the **incorporation of Artificial Intelligence** developed in collaboration with ARGO Vision, a startup specializing in AI that was acquired by SEA Vision in 2020.



We integrate a blend of cutting-edge technologies, including **neural, pre-neural, and non-neural methods**, to strike the perfect balance between quality and operational efficiency.

Our proprietary technology, developed in-house by ARGO Vision, quickly adapts to meet the unique requirements of our clients. Pre-neural algorithms, a cornerstone of SEA Vision products, seamlessly complement the latest advancements in AI and machine vision. By combining these technologies with our expertise in machine automation and vision, we introduce a solution for quality control in the intricate realm of lipstick production.



Our **neural networks undergo extensive training** on thousands of real lipstick images. Additionally, we employ synthetic lipstick generation to expand our dataset, ensuring our model can effectively check even previously unseen lipstick variations.

Ensuring data security, all our systems comply with CFR Part 11 regulations.

AI powered by



HARDWARE

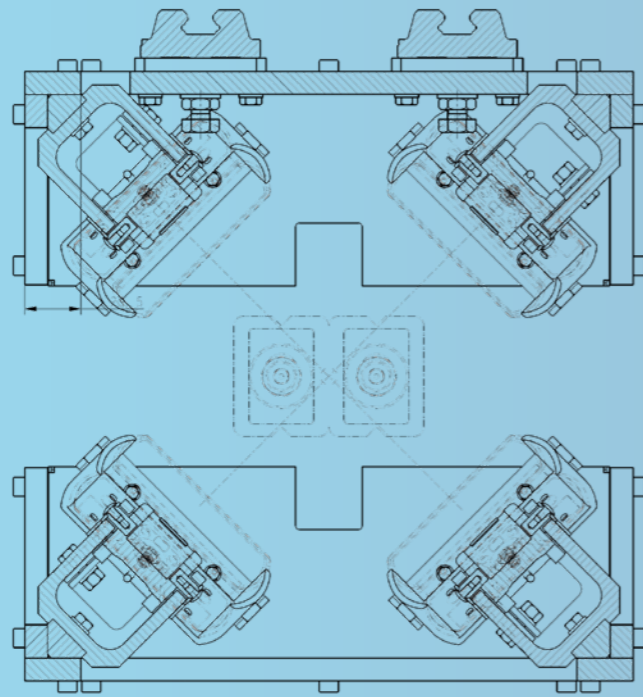
The system consists of an **industrial PC with top tier hardware**, connected to **multiple cameras** for lipstick inspection. Specifically tailored **LED lighting** increases the visibility of lipstick features.



Our hardware design is optimized to **highlight lipstick features**. Utilizing five cameras, we capture 360° images of each lipstick throughout the production cycle. Purpose-built LED lights illuminate product details, enabling our AI algorithms to function reliably and accurately. An intuitive Human-Machine Interface (HMI) provides operators with **real-time feedback on production** control, facilitating prompt adjustments as needed. On-screen production counters are accessible and easily stored locally or remotely for tracking purposes.

Our solution is **compact, simplifying integration** into existing production lines without the need for extensive mechanical adjustments. In cases where your machine lacks an automatic rejection system, we offer seamless integration. The entire solution is enclosed to safeguard your operators from photobiological risks.

Drawing on over 25 years of experience, SEA Vision specializes in custom vision solutions for automation, installing over 7000 systems worldwide.



EASY CONFIGURATION

We understand the significance of the human-machine interface, which is why A-eye lipstick is designed to **be intuitive and user-friendly for your operators.**

Creating a new format on the machine is a guided process: an intuitive wizard (or setup assistant) leads the operator through a series of step-by-step dialog boxes.

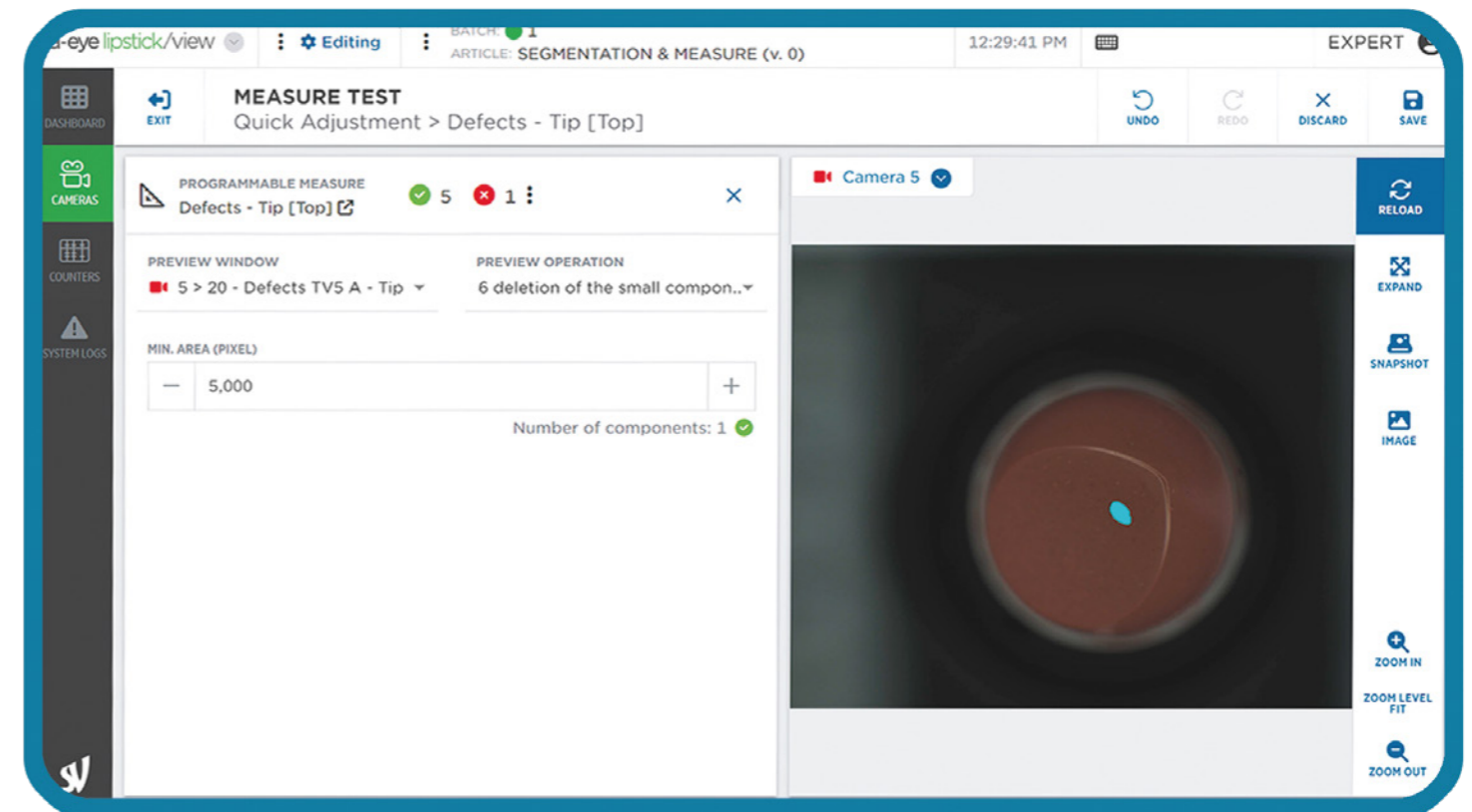
With just a few image acquisitions needed to create the format, minimizing impact to production scheduling.

MACHINE INTEGRATION

SEA Vision's expertise in integration is built on decades of experience working alongside machine manufacturers to satisfy the needs of packaging customers worldwide. Such a wide and mature experience guarantees **correct machine integration**, accurate **signal exchange management** and integrated **automation and rejection logics.**

With A-eye lipstick, integration into your production line is effortless, regardless of your machines' automation level.

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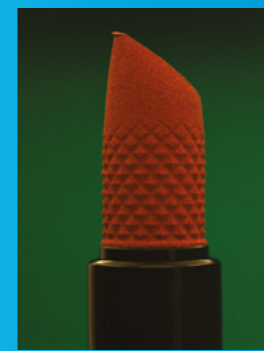


OUR TECHNOLOGY FOR YOUR ELECTRONIC RANGE BOARD

Our quality control system ensures objective inspection of all production batches. A-eye lipstick **performs multiple checks** on your product, with predefined parameters and acceptance thresholds for each type of error. These settings can be adjusted based on the production type and desired level of control.

The system can generate **customized reports** for sharing with your trading partners, facilitating communication through electronic range boards.

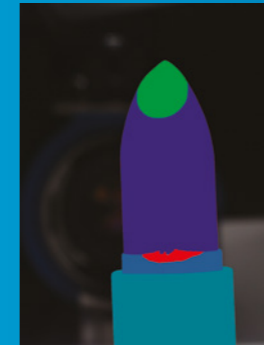
At the end of production, the system offers the option to save all batch images for potential future requirements.



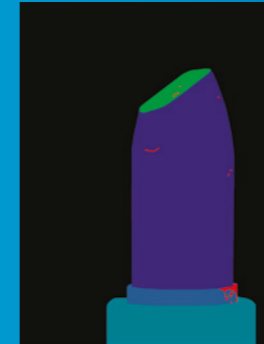
Chipped tip



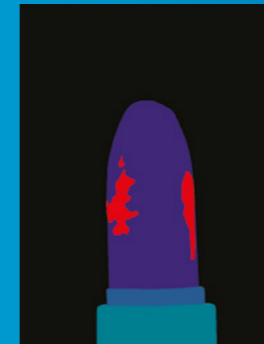
Holes on the tip



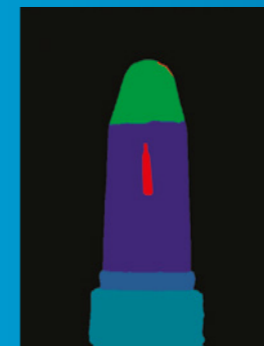
Wrong lipstick insertion



Contamination, dirty neck



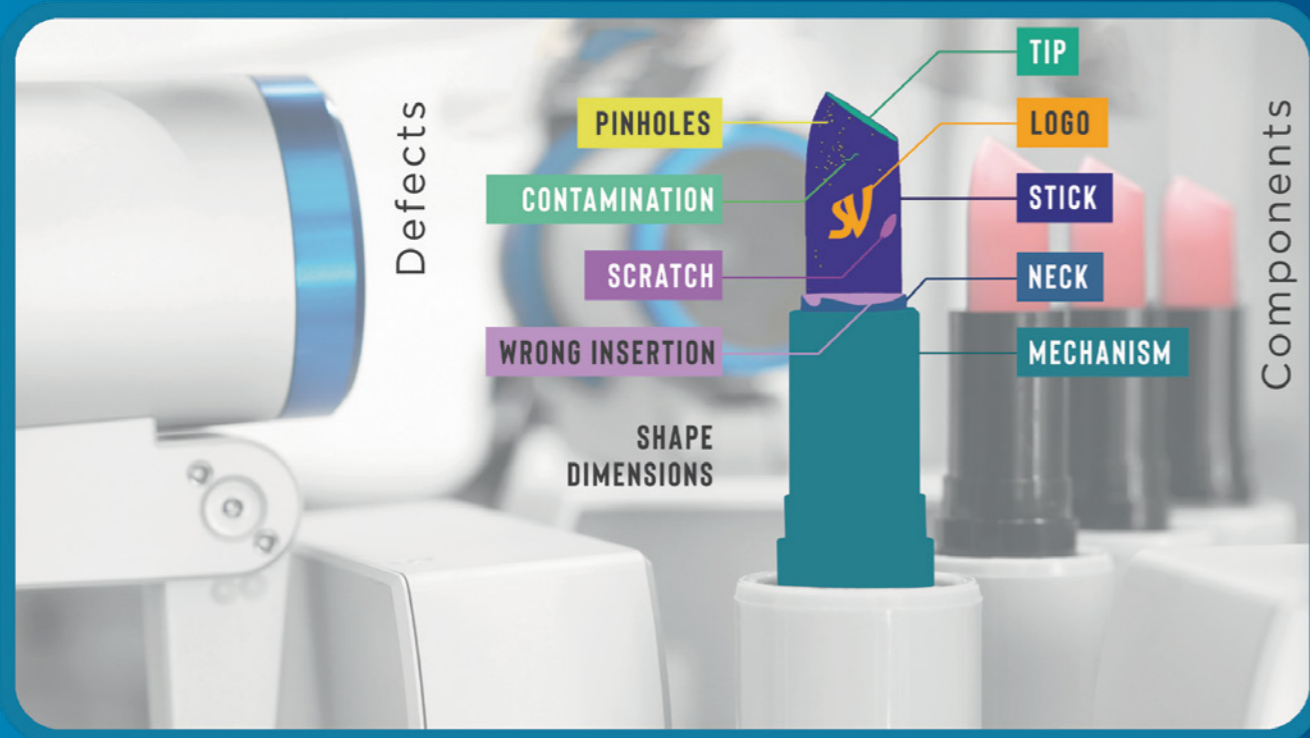
Colour inclusion



Scratch

BENEFITS

The system improves product quality and boosts production performance by providing automatic, consistent, and reliable control over 100% of your lipstick production.



AWARDS

a-eye lipstick won Cosmopack Asia Awards 2023, in the category innovative technologies



FOR MORE INFORMATION

Discover more about SEA Vision solutions for cosmetic industry.



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