

The Self-Driving Factory

Laminar for Flavor & Fragrances

Laminar's self-driving technology retrofits easily into F&F facilities to unlock hidden production capacity so you can say yes to more SKUs without killing your agility.

Turn production backlog into revenue while protecting quality

- Overwashing during Clean-In-Place is time taken away from production.
- Product changeovers flush good product straight down the drain.
- More small-batch SKUs mean more cleaning cycles that create more slack.

JOIN GLOBAL F&F MANUFACTURERS REDUCING UTILITIES AND GAINING AGILITY

15%

Time savings from CIP cycles

\$1500

Additional revenue recouped per production hour

27-29%

Reduction in CIP water & chemical usage

<1 year

Return on investment

MONIN®

Angel Pagan
VP of Manufacturing

"There's no technology out there like Laminar. As a company that's always pushing for innovation, Monin sees this as the kind of **AI-driven solution that gives manufacturers a real edge**. The fact that **Laminar delivers on both sustainability and profitability** makes it an easy decision to pilot and scale."

PROFITABILITY AND SUSTAINABILITY ARE NOT A TRADE-OFF WITH LAMINAR TECHNOLOGY



Faster CIP on Spray Dryers, Blenders & Tanks
End cycles the moment residue clears — not when a worst-case timer expires.



Chemical Use Reduction
Spend less on chemicals by running steps to clean-condition. Know when you're overdosing.



Water Waste Reduction
Reduce the water used during rinse steps by only running each rinse step only as long as needed.



Faster Product Changeovers
Recover product waste at both the tail and head of every batch transition and run faster changeovers.



Continuous Quality Monitoring
Flag batch deviations from spec continuously to avoid recalls and end-of-line quality fails.



Downtime & Batch Loss Prevention
Catch underwash instances before they become contamination events or costly batch losses.

Trusted By Global Leaders in F&F



dsm-firmenich

Givaudan

KERRY

symrise



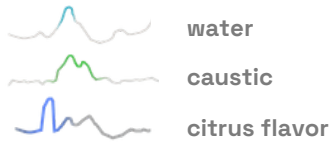
Self-Driving CIP & Changeovers for Flavors & Fragrance

LAMINAR

LAMINAR'S SELF-DRIVING AUTOMATION

SENSE • PREDICT • ACT

01 SENSE



See Real-Time Fluid Conditions

Patented spectral sensors read the liquid condition in real-time. Get the full picture instead of just one parameter.

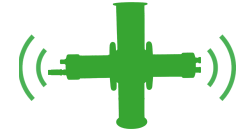
02 PREDICT



Automate the Optimal Action

Pre-trained ML models start delivering recommendations on day 1. After your QA team validates, processes can run without constant tweaking of recipes.

03 ACT



Self-driving Takes Over

Closed-loop commands go directly to your PLC. Clear action given to your PLC to regulate the process cycle after cycle.

LAMINAR'S ML MODELS ARE BUILT ON MILLIONS OF OBSERVED CYCLES, CREATING AN INDUSTRY-STANDARD REFERENCE THAT CAN BE DEPLOYED IMMEDIATELY.

READY TO DEPLOY FLAGSHIP ML MODELS

Self-Driving Clean-In-Place (CIP) Model

Automatically advances CIP steps when clean is achieved. Eliminates overwash and underwash instances. Reduces time spent on CIP cycles while meeting quality standards.

Self-Driving Product Changeover Model

Detects the exact product-to-product or product-water transition interface— reducing product loss at the tail and head of every run. Also reduces water and chemicals.

FULL ML MODEL LIBRARY

- Chemical Savings Models

Chemical Reclaim

Chemical Overdose

- Emulsification
- Underwash Detection
- Filtration

LAMINAR SENSORS



Clamps onto existing production lines, no plumbing changes. Reads liquid condition continuously and sends spectral data in real time.

ML MODEL ON THE EDGE



Our ML models live on the edge gateway on your factory floor. Sensor data is relayed to the gateway, ML models make step-advance decisions, then communicate them to the PLC for execution.

INSIGHTS PLATFORM

Automation is active

Water savings >
1,140 gal
0 gal actualized
1,140 gal projected

21%

Time savings >
3h 23s
0s actualized
3h 23s projected

16%

Capabilities

- Total Savings Insights
- Inefficiency & Anomaly Detection
- Batch Records on Each Run & Line
- Trend Analysis for Savings Opportunities

Ready to save production time, chemicals, and water?

Talk to our team at runlaminar.com/contact

LAMINAR



hello@runlaminar.com

www.runlaminar.com