

# FOOD PROCESSING: Bakery Production Facilities

A case study about molds prevention, food safety and quality.

## At a glance

In large-scale food manufacturing environments, the combination of **moisture, heat, and organic residues** creates ideal conditions for **mold proliferation**.

**Upper Room GUV** offers a cutting-edge **sanitation solution designed to seamlessly integrate into production workflows** while maintaining the **highest standards of quality and safety**.

## Nourishing a Better World.

A global leader in the baking industry has proactively embraced innovation to protect food quality and workplace safety.

With a strong commitment to excellence and continuous improvement, the company adopted UV-C disinfection technology—a science-based solution that enhances hygiene standards without relying on chemical additives.



## CHALLENGES



The world's largest baking company specializes in the high-volume production of **buns** and **tortillas**, delivering consistently high-quality products that reflect the company's **reputation for excellence**.

Several months ago, the team adopted a **holistic strategy** to enhance product protection by **integrating UV-C technology**. They began by installing UV-C systems within their air handling units (AHUs) to **improve overall indoor air quality**, but soon recognized the need to **target critical zones** where **precise ventilation control directly impacts product integrity**.

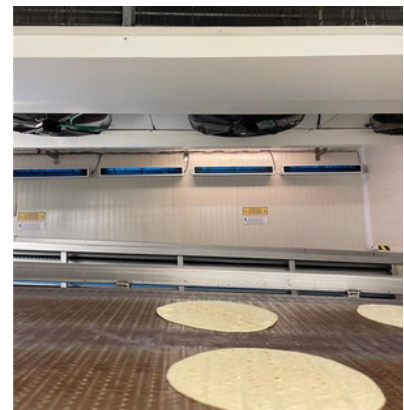
Focus was placed on the **tortilla production line**, particularly during the **cooling phase**, where hundreds of tortillas travel along two multi-tier conveyor belts. This stage relies on a **forced airflow system**, driven through a row of **cooling evaporators**, designed to rapidly bring down the tortillas' temperature.

## PROPOSED SOLUTION



After a first visit of our team for the commissioning, a total of 13 **UV-FLOW-90H-C-WH systems were strategically installed**—6 units along one wall and 7 along the opposite wall, precisely **angled to irradiate the surface of the cooling evaporators**.

The installation was executed uniformly, and the systems effectively **confined UV-C light to the upper zones of the room**, ensuring both **optimal disinfection coverage** and **adherence to safety standards**.



A verification test was conducted by a C-GUVMP accredited by NALMCO, in accordance with the standards outlined in the GUV Certification Training Program.

Find more here:  
<https://www.nalmco.org/guv-training>



The inspection revealed irradiance levels at "eye height" to be 100 times lower than the safety threshold of  $0.2 \mu\text{W}/\text{cm}^2$ , demonstrating exceptionally low exposure in occupied zones.

Measurements taken one meter from the UV-FLOW units, at the height of the devices, showed UV-C intensities between  $29$  and  $33 \mu\text{W}/\text{cm}^2$  —precisely where disinfection performance is required.

## POST INSTALLATION



After installation, UV-C validation confirmed the system was **effectively targeting critical contamination zones**—specifically the space between the two multi-level conveyor belts during the cooling phase. UV-FLOW devices were strategically placed to ensure **continuous irradiation of airflows and surfaces where airborne spores are most likely to circulate** and come into contact with exposed bakery products. **Once spores settle on the product surface**, it's often **too late** —removal becomes nearly impossible. For this reason, **the setup prevents spore spread at the source**, protecting product quality and ensuring hygienic processing conditions, **thus meeting safety standards for both products and employees**.

Safety signage was installed per regulations, and a detailed report was provided to the facility manager.

## LIGHT PROGRESS VALUES



The decision-making process began when the Quality team received internal insights about UV light applications in similar production settings. A root cause analysis clearly identified the contamination source, and **UV-C emerged as a promising remedy**.

But why Light Progress?

1

### Proven experience and market references

Light Progress' long-standing **reputation** in the UV-C industry, with **successful installations** across the world and across markets - focusing on **food industries** - **made the difference**.

2

### Technical credibility

**In-depth knowledge** of UV-C and ventilation dynamics providing tailored recommendations that addressed **custom specific needs** where a key to a **reliable but easy installation**.

3

### Readiness to support certified installations

A **defined process** that ensured the installation met all **compliance standards**, supported by **detailed documentation**, **expert guidance**, and certified NALMCO - added value.

*"The installation was carried out without any issues and everything is working smoothly with all safety measures properly implemented and communicated to our team.*

*While it's still early to evaluate the full impact, we believe this technology holds great potential for disinfection and for extending the shelf life —offering a valuable alternative chemical additives."*

**Plant Manager**