

SUSTAINABLE INDUSTRY STARTS HERE



EST. 1992

PREPARE THE INDUSTRY FOR THE FUTURE
WITH JIMCO'S EFFICIENT,
ENVIRONMENTALLY FRIENDLY
AIR PURIFICATION SOLUTIONS



TABLE OF CONTENTS

Introduction to JIMCO A/S

- 1.1. JIMCO's History and Mission page 3
- 1.2. Technology and Innovation page 4

FLO-K & FLO-P Systems

- 2.1. The FLO-K System page 5
- 2.2. The FLO-P System page 6

Applications

- 3.1. The Food Industry page 11
- 3.2. Municipal Areas page 12
- 3.3. Animal Farming page 13
- 3.4. Other Industrial Sectors page 14

Case Studies

- 4.1. DAKA Case Study page 15
- 4.2. Daloon Case Study page 16
- 4.3. Schaffelaarbos Case Study page 17
- 4.4. BirdsEye Case Study page 18
- 4.5. IGLO Case Study page 19

Conclusion and Future Outlook

- 5.1. Sustainability and Environmental Impact ..page 20
- 5.2. Future Developments page 21

SUSTAINABLE CO₂-REDUCING AIR TREATMENT WITH UV-C TECHNOLOGY

Using UV-C Technology, JIMCO A/S specializes in the elimination of microorganisms, reducing odors from waste, compost, and wastewater in exhaust air, contributing to a cleaner environment.

For many years, JIMCO A/S has developed and produced air purification systems specifically designed for the reduction of grease and odours in exhaust air at high temperatures (frying, boiling, and deep-frying processes).

JIMCO A/S systems are based on UV-C & Ozone technology, utilizing a process called photolytic oxidation for

the cold combustion of organic matter. The air passes through this photolytic oxidation process using special JIMCO UV-C lamps, which break down the molecules in the air to enhance oxidation. The combination of UV-C light and oxygen (O₂) generates ozone (O₃) to oxidize the remaining particles, completing the VOC treatment.

The use of UV-C light to eliminate microorganisms in the air is a technique that has been known for decades. UV-C light reduces the overall number of microorganisms in the air by breaking down the DNA bonds in the organisms.



INNOVATION AND DRIVE

DESIGNED AND DEVELOPED IN DENMARK

JIMCO A/S: Pioneers in Air Purification

Since the launch of our first air purification unit in 1992, JIMCO A/S has been at the forefront of advanced environmentally friendly air purification solutions.

Over the years, JIMCO A/S has expanded its reach, now supplying its products to a wide range of industries and institutions globally.

No matter the size of the project, JIMCO A/S has a solution.

JIMCO A/S is known for combining common sense with innovative thinking, which has led to deliveries to some of the world's leading food industries.



FUNCTIONAL PRODUCTS

JIMCO A/S groundbreaking FLO-K and FLO-P systems for the industry are tailored to address vital challenges in production facilities by effectively purifying exhaust air. These systems excel at eliminating odors and breaking down grease and oil in ventilation systems.

Our systems ensure compliance with the EU's NEC Directive.

This makes JIMCO A/S a preferred partner for companies seeking targeted and efficient solutions to improve outdoor air quality. The reduction of unwanted particles in the exhaust air also significantly minimizes the risk of fire.

As regulations for industrial companies become stricter, JIMCO A/S remains at the forefront with innovative solutions. A growing focus on the importance of clean air has motivated JIMCO A/S to develop these advanced systems that offer efficient exhaust air purification, which is crucial for a safe and healthy working environment across a wide range of industries.

DISCOVER THE POWER OF FLO-K & FLO-P

FOR EFFICIENT AND ENVIRONMENTALLY FRIENDLY
AIR PURIFICATION IN YOUR BUSINESS.

FLO-K & FLO-P represent:

✓ **Effective Purification of Exhaust Air**

JIMCO's technology specializes in purifying exhaust air from production processes, effectively removing odors and reducing emissions and carbon compounds.

✓ **Reducing Environmental Impact:**

By purifying exhaust air, these systems contribute to a significant reduction in the company's environmental footprint and improve relations with the local community by minimizing odor nuisances.

✓ **Fire Risk Prevention:**

The breakdown of grease and oil in exhaust ducts reduces the risk of fire, creating a safer working environment.

✓ **Energy Efficiency:**

JIMCO's solutions use energy-efficient processes for air purification, which can lead to lower operational costs over time and a reduced carbon footprint.

✓ **Minimal Maintenance:**

Automatic cleaning systems reduce the need for manual maintenance, saving time and resources.

✓ **Compatibility with All Production Environments:**

These systems are designed to integrate into a wide variety of production facilities, making them versatile solutions for industrial needs.

✓ **Compliance with Regulations:**

The use of FLO-K and FLO-P systems helps companies comply with environmental regulations by reducing emissions and pollution.

By implementing JIMCO FLO-K or FLO-P, companies gain an effective solution to address specific challenges associated with purifying exhaust air, ensuring sustainable operations and fulfillment of environmental obligations.



THE DIFFERENCE BETWEEN FLO-K & FLO-P



The photo shows two proud “JIMCO men” standing beside three FLO-K units.

THE DIFFERENCE BETWEEN FLO-K AND FLO-P SYSTEMS FROM JIMCO

- lies primarily in their areas of application and technological functions, which are tailored to meet specific air purification needs.

FLO-K System:

The FLO-K system is designed to handle a wide range of air quality challenges, primarily through photolytic oxidation, a process where contaminated air is exposed to UV-C light and ozone. This system effectively reduces odors and breaks down grease, oil, and other organic particles in the air. FLO-K is particularly suitable for environments requiring air treatment at temperatures up to 45°C (without the need for secondary cooling), such as wastewater treatment plants, fishmeal production, waste management, etc.

It is possible to combine the system with a JIMCO frequency spray system and a catalyst for further air purification.

FLO-P System:

The FLO-P system specifically focuses on cleaning exhaust air from industrial fryers and ovens, where grease, oil, and odors in the exhaust air are a challenge, and where the temperature exceeds 45°C. FLO-P is highly effective in reducing VOC content in the air.

Common Features:

Both FLO-K and FLO-P use JIMCO UV-C light and ozone to oxidize pollutants but are optimized for specific exhaust air needs. Both systems offer environmentally friendly air purification solutions without the use of chemicals, reduce fire risk by removing grease and oil from ventilation systems, and are equipped with an automatic CIP (Clean-In-Place) cleaning system for minimal maintenance. Both systems are made of acid-resistant stainless steel (316L) and utilize JIMCO’s UV-C Photozone™ lamps, along with cloud and data logging capabilities.

Key Differences:

The main difference lies in their application areas and optimization for specific challenges: FLO-K offers broader use for general air quality improvement at lower temperatures, while FLO-P is specialized for exhaust air from fryers, ovens, and production facilities, with a particular focus on higher temperatures, grease, and oil.

FLO-P SYSTEM



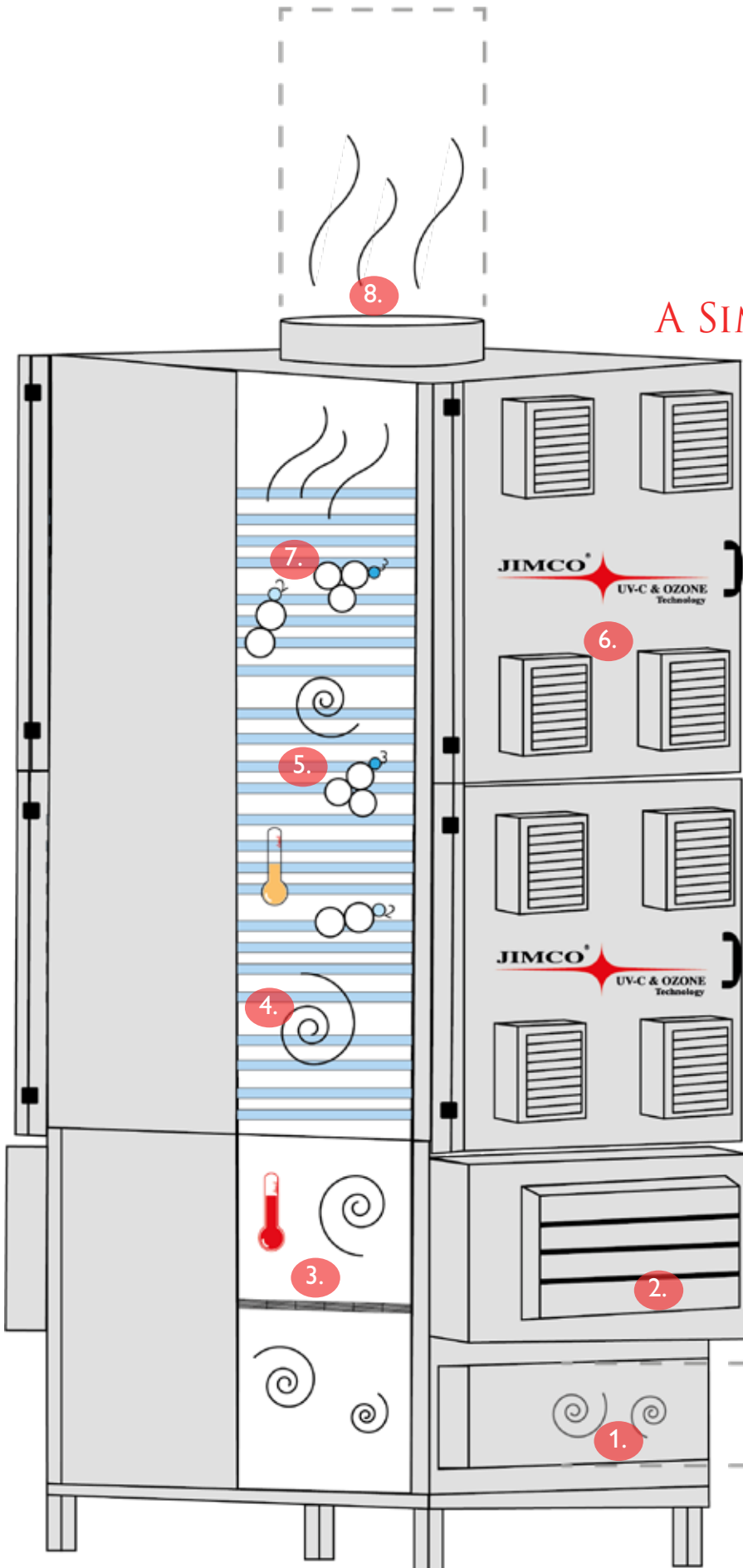
The FLO-P air purification system is typically manufactured according to the customer's specific requirements. There are two main considerations when designing the air treatment system:

- **The first step** is to calculate the unit's size to successfully treat the air. This calculation is based on the amount of process air in m^3/h , airflow rates, organic content, air temperatures, requirements for grease and odor reduction, etc.
- **The second step** is to configure the installation to meet space requirements, as space is often limited in a production facility.

Over the years, JIMCO A/S has designed units that can be mounted in various locations—on the floor, ceiling, wall, or even on the roof—so they can meet all customer installation needs.

Access for maintenance is also carefully considered during the design process.

FLO-P SYSTEM



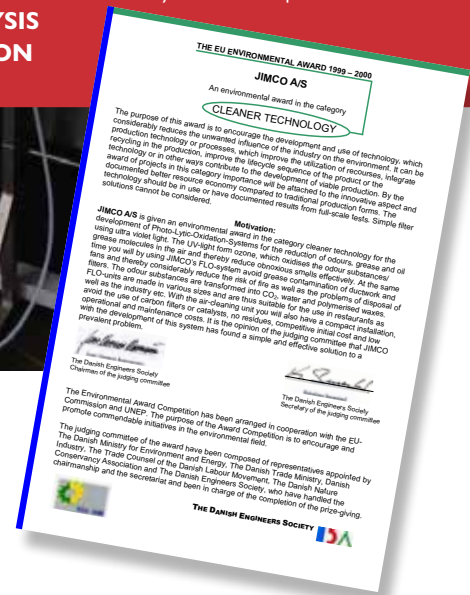
A SIMPLE EXPLANATION:

1. Hot primary air from the process enters the bottom of the FLO-P.
2. The air adjustment system regulates secondary air, which is used for condensation and temperature regulation of the primary air.
3. The primary air passes through a baffle filter to separate water and grease droplets. The air then passes over the condensation blocks, which results in further grease and water separation from the airflow.
4. The primary air is mixed with the secondary air to achieve the correct oxygen level and temperature for the photolytic oxidation process.
5. UV-C reaction chamber.
6. Technical room behind the door.
7. The air goes through the photolytic oxidation process using JIMCO's special UV-C Photozone™ lamps, which break down the molecules in the air for better oxidation. The combination of UV-C light and oxygen (O₂) generates ozone (O₃) to oxidize the remaining particles and complete the VOC treatment.
8. After 3 seconds of reaction time in the duct, the purified air is released into the environment via the exhaust.

FLO-K SYSTEM



In February 2000, JIMCO A/S received the EU's environmental award in the category of "Cleaner Technology."
They received it because they had developed:
**PHOTOLYSIS
OXIDATION
SYSTEM**



FLO-K SYSTEMS ARE MANUFACTURED AND DELIVERED FOR VARIOUS TYPES OF TASKS.

The system can be installed in a common exhaust duct from various processes. FLO-K can be designed to treat the airflow as desired by the customer; JIMCO has no limitations. JIMCO's industrial systems are equipped with a PLC for monitoring and data logging of all digital signals.

JIMCO's FLO-K systems are equipped with automatic CIP cleaning systems. The CIP system is controlled from the PLC, where the cleaning sequence can be programmed.

The JIMCO FLO-K system can be combined with the JIMCO frequency spray system for locations with ammonia and H₂S (hydrogen sulfide) content. Ammonia is removed from the contaminated air before it enters the UV-C reaction chamber.

(See results on odor reduction on page 14)

JIMCO AIR PURIFICATION SYSTEM TYPE FLO-K

The JIMCO FLO-K air purification system has many different applications at air temperatures up to 45°C.

The FLO-K system does not require secondary air to cool the primary air that needs to be treated. The process is called photolysis oxidation, which means the contaminated air is exposed to a combination of UV-C light and ozone. Pollutants in the air are oxidized or cold-combusted.

Odors and organic particles in the air are reduced to an absolute minimum.

The typical reduction in OU/m^3 can be up to 99%.

The reaction chamber in a JIMCO FLO-K system is made of acid-resistant stainless steel (316L) and contains a number of "JIMCO UV-C Photozone™ lamps.

The FLO-K system is sized according to the desired air volume to be purified, the level of contamination, and in compliance with regulatory requirements.



THE FLO-K SYSTEM CAN BE CUSTOM-DESIGNED TO MEET THE CUSTOMER'S NEEDS.

The system can be combined with a JIMCO frequency spray and photolytic oxidation unit.

The UV-C & Ozone technology is combined with a catalyst that contains activated carbon. A catalyst should NOT be confused with a carbon filter.

Results have shown that the excess ozone produced by the FLO-K system regenerates the activated carbon elements, thereby extending the lifespan of the activated carbon.



MONITORING OF THE AIR PURIFICATION PROCESS

With JIMCO's Cloud solution, the operation of the air purification system can be monitored directly on a phone, tablet, or PC via the cloud worldwide.

Advantages of Cloud-Based Monitoring:

- 1. Continuous Supervision:** Allows real-time tracking of the system's operation with immediate access to key data and statistics, ensuring that the air purification process proceeds as planned.
- 2. Efficient Troubleshooting** Enables quick and effective identification and resolution of operational issues, reducing downtime and production stops.
- 3. Data Insights:** Provides insights into system performance over time through historical data, helping to optimize operational processes.
- 4. Remote Access** Permits system monitoring from anywhere and at any time with internet access, offering flexibility and convenience.
- 5. Multi-Site Monitoring:** Allows monitoring of multiple plants and systems from one centralized platform, simplifying performance comparisons and the implementation of consistent air purification strategies



Your Reliable Documentation



APPLICATIONS IN PRODUCTION ENVIRONMENTS

FOOD INDUSTRY

- ✓ Fast-food production
- ✓ Fish production
- ✓ Slaughterhouse production
- ✓ Bread production
- ✓ Chips production
- ✓ Chicken production
- ✓ Shrimp boiling
- ✓ Deep frying

MUNICIPAL AREAS

- ✓ Wastewater treatment plants
- ✓ Pump wells/stations
- ✓ Composting facilities
- ✓ Landfill sites
- ✓ Sludge tanks

- ✓ Manure tanks
- ✓ Exhaust sterilization
- ✓ Biogas plants
- ✓ Waste management

ANIMAL FARMING

- ✓ Exhaust air from barns
- ✓ Zoos

PROTEIN

- ✓ Meat and bone meal production
- ✓ Fishmeal/fish oil production

FEEDSTUFFS

- ✓ Grain and feed factories
- ✓ Animal feed production

OTHER

- ✓ Pharmaceutical production
- ✓ Chemical production
- ✓ Biodiesel production
- ✓ Textile production
- ✓ Medical cannabis

JIMCO A/S PROMOTES
SUSTAINABILITY WITH
INNOVATIVE AND
ENVIRONMENTALLY FRIENDLY
PURIFICATION SOLUTIONS.

IMCO®

UV-C & OZONE
Technology

WWW.JIMCO.DK

IMCO®

UV-C & OZONE
Technology

WWW.JIMCO.DK

Rechts
Unten A

Rechts
Unten B



DANISH QUALITY



At JIMCO A/S, we are proud to represent the best of Danish engineering and manufacturing.

Our FLO-K and FLO-P air purification systems are the result of meticulous innovation and craftsmanship, assembled at our facilities on Langeland, Denmark.

Every step of the process, from design to assembly, reflects our dedication to quality and durability.



DANISH QUALITY IS AT THE CORE OF OUR COMPANY'S ETHOS.

We understand the importance of reliable solutions in the industry and strive to deliver products that not only meet but exceed our customers' expectations.

We achieve this by thoroughly testing each system to ensure they meet the highest standards before leaving our facilities.

By choosing JIMCO's FLO-K or FLO-P systems, you are investing in a solution developed with attention to detail and a deep understanding of environmental challenges.

Our commitment to Danish quality means we use the best materials, the latest technologies, and the most efficient processes to ensure that every product stands as a symbol of innovation and reliability.



In an era where sustainability and efficiency are paramount, JIMCO guarantees that Danish quality is embedded in every solution we offer. As we export worldwide, we operate under the principle of zero defects, ensuring that our customers always receive the best and most reliable products.



CHOOSE JIMCO
FOR A FUTURE WHERE CLEAN AIR
AND SUSTAINABLE SOLUTIONS GO
HAND IN HAND WITH
UNMATCHED QUALITY

RESULTS IN ODOR REDUCTION

FLO-K SYSTEM DEMONSTRATED AT DAKA

Effective Air Purification at DAKA with JIMCO's FLO-K System

JIMCO A/S has demonstrated an efficient air purification solution at DAKA using the FLO-K system, which significantly reduces ammonia, hydrogen sulfide, and odors in exhaust air. This showcases the technology's potential for environmental protection and sustainability.

Analysis data reveals a substantial improvement in air quality, opening new possibilities for emission management and confirming JIMCO as a leader in sustainable solutions.

Measurable Benefits

The analysis at DAKA focused on the effectiveness of JIMCO's FLO-K technology in reducing concentrations of ammonia (NH₄) and hydrogen sulfide (H₂S), as well as overall odor reduction in the exhaust air from their treatment facility. The results were impressive, showing a significant reduction in unpleasant emissions and a

marked improvement in air quality, clearly demonstrating the power of JIMCO's advanced technological solutions.

The Technology Making a Difference

With JIMCO's technology, emissions of ammonia and hydrogen sulfide were reduced to non-detectable levels.

Even more impressive was the overwhelming reduction of odors by more than 98% after the catalyst process.



Sampling and analysis were conducted in collaboration with Force Technology, and DAKA performed additional analyses with their own equipment.

| Measured in ppm | | Measurement Point | | |
|---|---|--------------------------------------|--|----------------|
| | Raw Gas ppm | After Frequency Spray and Before FLO | Before CAT | Clean Gas |
| Ammonia - NH₄ | 150 | 20 | 0 | 0 |
| Hydrogen Sulfide - H₂S | 110 | 30 | 15 | 0 |
| Odor Reduction | | | | |
| | Corrected Odor Concentration LE/m ³ (20°C) | Reduction LE/m ³ | Odor Concentration Analysis OU/m ³ (20°C) | Reduction OU/m |
| Raw Gas | 1.466.666 | | 2.366.666 | |
| Before FLO - After Frequency Spray | 850.000 | 42,05% | 1.600.000 | 32,39% |
| After FLO - Before CAT | 376.666 | 74,32% | 596.666 | 74,79% |
| After CAT | 15.700 | 98,93% | 25.666 | 98,92% |



We have been using JIMCO's air purification system for over 20 years.

With the help of the FLO-P system, we are able to purify the air from our spring roll factory in an effective and environmentally friendly way.



This benefits both us and our surroundings.

Peter Madsen, Technical Manager, Daloon

THE SAME FLO-P SYSTEM HAS BEEN IN OPERATION FOR MORE THAN 28 YEARS!

Daloon, a food production company located in Nyborg, Denmark,

- faced a significant challenge with the high consumption of oil and fat in their industrial deep fryers.

The accumulation of grease not only posed a fire hazard but also resulted in a persistent odor in the surrounding environment.

In collaboration with JIMCO A/S, Daloon participated in the development of FLO-P technology to address their oil and grease issue. In 1996, they installed the first full-scale FLO-P system, which proved to be highly effective in reducing fire risk and eliminating the odor problem. The successful installation of the FLO-P system led

Daloon to expand their production of pre-fried spring rolls, adding a second fryer system to their production line just a year later. To ensure optimal safety and odor control, they also ordered a second JIMCO FLO-P system for the new fryer.

Today, 28 years later, the partnership between Daloon and JIMCO continues to thrive, with the FLO-P technology still playing a critical role in ensuring a safe and pleasant working environment for all employees and nearby residents.

In 2024, Daloon invested in another system to further enhance their operations.

CASE STUDY

In the picture, JIMCO's advanced air purification system is installed at:

Schaffelaarbos in Barneveld, the Netherlands.

The system has proven its effectiveness as a sustainable solution, reducing unpleasant odors and enhancing the company's reputation as a responsible and environmentally conscious player



No CHEMICALS



JIMCO A/S is an environmentally friendly and sustainable company, providing advanced air purification systems for industrial odor control.

Our technology is designed to handle airborne pollutants and effectively neutralize odors, ensuring a cleaner and more pleasant environment.

Case Study: Schaffelaarbos in Barneveld

In the heart of an industrial area close to a residential neighborhood lies Schaffelaarbos in Barneveld, a company specializing in the production of circular proteins for the animal feed industry. Despite their commitment to innovation, they faced a significant challenge: controlling the odors emitted from their production process, which became a concern for both the company and the local community.

The Challenge

Schaffelaarbos handled large volumes of air daily, approximately 90,000 m³, making odor control a critical task. Frequent complaints from nearby residents affected the company's reputation and its relationship with the community.

The Solution

Schaffelaarbos installed the JIMCO Air Purification System, a

groundbreaking technology that uses photolysis oxidation to eliminate odor-causing compounds and convert them into harmless byproducts like water vapor and carbon dioxide.

The system quickly became operational and began effectively treating the large volume of air circulated during production.

The Results

Soon after installation, residents noticed a significant reduction in unpleasant odors. The installation of the JIMCO unit not only resolved the immediate odor problem but also improved Schaffelaarbos' reputation as a responsible and environmentally conscious company.

The Future

Thanks to the JIMCO Air Purification System, Schaffelaarbos can now focus on producing high-quality circular proteins for the animal feed industry, confident that they operate in harmony with their surroundings. The success demonstrates how technology can solve environmental challenges and create a sustainable future.



BIRDSEYE LOWESTOFT

We are pleased to work with BirdsEye in the United Kingdom. BirdsEye is one of the leading international suppliers of prepared fish and chicken products.

We currently have 6 JIMCO UV-C & Ozone systems providing odor reduction at BirdsEye.

Across all 6 JIMCO systems, we achieve up to 96% odor reduction without the need for a catalyst. These are truly remarkable results, and they are tested annually to ensure sustained performance.

Jimco A/S' UK distributor, Elgin Bay, currently operates and maintains several systems at BirdsEye, including:

4 x FLO-P 100 systems
2 x FLO-K 126 systems

Elgin Bay also has several other installations across the UK.

Some of the early systems were originally installed back in 2011, and recently, we have added 3 systems to treat a new fish production line and 2 new systems to replace an outdated scrubber system.

Our FLO-K and FLO-P systems use advanced photolytic oxidation technology to break down organic particles and odors, without the use of filters or chemicals.

THIS ENERGY-EFFICIENT METHOD REDUCES THE CARBON FOOTPRINT.

In addition, our units contribute to significantly lowering operational costs by eliminating the need for chemicals, filters, and potential incineration systems.



EFFECTIVE ODOR REMOVAL AT



A fishery located in Calbuco, in the Los Lagos region.

The sources include an exhaust pipe connected to the JIMCO FLO-K system, which treats the exhaust air in two phases. First, UV light and ozone are used to reduce odors, and then a catalyst is employed to reduce the acidity of the exhaust air by converting H_2S into SO_2 .

To assess the system's effectiveness, air samples were taken at three different points for each source, corresponding to the three phases of the reduction process: before treatment (A), after treatment with UV and ozone (B), and after passing through the catalyst (C).

Tabel No.1 Results obtained from the measurement and subsequent olfactometry analysis

| Source | Point | Bag number | Sample time | Final concentration (our/m ³) | Average concentration (our/m ³) | Odour notes |
|------------|-------|------------|-------------|---|---|----------------|
| Evaporator | A | 509 | 11:26 | 123.093 | 102.135 | Sea notes |
| | | 546 | 11:45 | 107.767 | | |
| | | 547 | 11:58 | 80.316 | | |
| | B | 545 | 12:10 | 24.687 | 24.622 | Chemical notes |
| | | 544 | 12:16 | 26.869 | | |
| | | 543 | 12:24 | 22.504 | | |
| | C | 505 | 11:26 | 158 | 137 | Chemical notes |
| | | 524 | 11:45 | 150 | | |
| | | 525 | 11:58 | 108 | | |

Efficiency results

Tabel No 2. Efficiency result of the system in Scrubber - Evaporation Plant

| Scrubber - Evaporation Plant | |
|---|--------|
| Efficiency of Section AB | 75,90% |
| Efficiency of Section BC | 99,40% |
| Total Efficiency of the system (Section AC) | 99,90% |



The results of the measurement and analysis show a high efficiency in odor control, reaching up to 99.9% in the most favorable case. The use of the odor control system reveals higher efficiency in the evaporation plant, where the overall value reaches **99.9%**.

Iglo frozen foods are sold across the European continent in countries such as Austria, Germany, Hungary, the Netherlands, Portugal, Belgium, and France.

Iglo products:

- Fish products, fish fingers, fish burgers, breaded and baked fish
- Fresh frozen vegetables, frozen spinach, and peas
- Ready meals
- Chicken products, chicken nuggets • Vegan products.



4 x FLO-P unit - ready for delivery to Iglo

FISH FACTORY ACHIEVES GROUNDBREAKING CO₂ AND ENERGY SAVINGS

WITH JIMCO FLO-P AIR PURIFICATION SYSTEM



Iglo has become the largest and most recognized brand in frozen foods in Germany, Austria, Belgium, and Portugal. Generations of children have grown up with Iglo's iconic Captain Iglo. Iglo Germany is owned by Nomad Foods Europe.

The Iglo fish factory has achieved significant reductions in CO₂ emissions and energy consumption after the implementation of the innovative JIMCO FLO-P air purification systems.

Since the implementation, the fish factory has managed to generate an annual gas savings of approximately 10 MWh, which corresponds to a reduction of around 2,500 tons of CO₂. Electricity consumption has also seen positive results, and the fish factory expects to generate significant savings in the range of 100,000 euros per year.

The JIMCO FLO-P air purification systems are a groundbreaking technology that not only saves costs but also contributes positively to the environment.

Since the implementation of the JIMCO FLO-P air purification systems, the fish factory has not received any complaints from neighbors regarding odors or similar issues. Regulatory authorities have also praised the factory for installing the systems during their first visit.

"We are very pleased with the results of our implementation of the JIMCO FLO-P air purification systems. It is not only good business but also has a positive impact on the environment. We hope that our experience will inspire other companies to take similar initiatives to help reduce CO₂ emissions," says Denis Soukup, lead project engineer at IGLO.

JIMCO®

UV-C & OZONE Technology

GROUNDBREAKING UV-C AND OZONE SOLUTIONS FOR A SUSTAINABLE FUTURE
- WITH GLOBAL CLIENTS AND EXPORT.

JIMCO TECHNOLOGY REFERENCES

