

Xylem's Jabsco brand and the Global Ecology Group create sustainable disinfection solutions for the COVID-19 pandemic

Challenge

Amidst the global COVID-19 pandemic, the demand for decontamination solutions has grown exponentially along with the hygienic standards put in place to protect people from infection. Existing methods of disinfection often pose significant threats to our health and can harm the environment, which is why many are looking for more sustainable solutions.

Made from salt, water, and electricity, Advanced Electro-Chemically Activated Solutions (ECAS) are a safe and sustainable alternative to traditional disinfectant solutions. ECAS protect against a wide range of microbes and pathogens upon contact. Without using petrochemical ingredients, these solutions successfully remove viruses, bacteria, germs, fungi, and their spores in record time. ECAS are efficient, non-toxic, and biodegradable and can be used to disinfect commercial buildings, control biofilm, clean drinking water, preserve fruits and vegetables, and prevent legionella.

In response to the COVID-19 pandemic, Global Ecology Group (GEG) developed a fogging system to support the delivery of ECAS solutions in benign disinfection applications. GEG's Founder and CEO, Owen J. Morgan, has been developing ECAS since the early 1990's but enlisted Xylem's help to create a more accessible, portable ECAS fogging system for everyday spaces such as offices and vehicles.

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Xylem's MDD pumps never faltered."**

"As a one-stop shop, we have a broad range of pumps to suit any application, allowing companies like GEG to source quality components that meet their specific needs. We are pleased to work alongside GEG to bring this safe and sustainable disinfection solution to market," David Webber, Director, Strategy & Marketing, Specialty Flow Control at Xylem commented.



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PROJECT HIGHLIGHTS:

- Global Ecology Group developed an ECAS Fogging System as a safe and sustainable alternative to traditional disinfectant solutions in response to the COVID-19 pandemic.
- Xylem's 2.9 GPM MDD pump was able to increase operational efficiency and enhance durability for Global Ecology Group's ECAS Fogging System.
- The ECAS Fogging System will be an important tool in keeping our spaces and places free from the Coronavirus.



a xylem brand

Solution

Soon after the pandemic began, GEG launched the ECAS Fogging System, a portable plug and play dry fogging unit that uses high-grade titanium transducers to deliver small droplets of disinfection solution at a rate between 4 and 24 litres per hour, depending on the size of the system.

Powered by electrolysed water that is non-toxic and safe to humans, animals, and the environment, the fogging system exterminates 99% of all infectants that it meets, including the Coronavirus. As a result, the system is suitable for effective disinfection of large, enclosed spaces such as office rooms, vehicles and transit carriers, shipping containers, and aeroplane cabins.

During the product development stage, GEG called on global water technology company, Xylem, to provide its 2.9 Gallons Per Minute (GPM) Motor Driven Diaphragm (MDD) water pressure pumps to help transfer the ECAS from its vat into the portable fogging system. "I first started using Xylem's pumps over seven years ago when I needed a cost-effective, reliable pump for a pulsed water system I was developing. No matter the task at hand, Xylem's MDD pumps never faltered," Morgan said. "When it came to developing our automated ECAS priming system for our new fogging systems, I had no hesitation in specifying Xylem's MDD pumps."

The 2.9 GPM MDD can pump an output flow of 11 litres per minute and its multi-diaphragm design self-priming to a 10-foot vertical lift, with the ability to run dry without damage. The pump is equipped with a pulsation dampener which eliminates vibration, while the built-in bypass facilitates a smooth, quiet flow eliminating the need for an accumulator tank.

With its unique capabilities, Xylem's 2.9 GPM MDD was able to increase operational efficiency and enhance durability for GEG's ECAS Fogging System.

Result

Since its launch, GEG has carried out numerous demonstrations of the ECAS fogging system, including trials with air ambulance services in the United Kingdom. Following a demonstration of the ECAS powered fogging system to the East Anglian Air Ambulance team at Norwich

Airport in June, ATP hygiene tests carried out pre- and post-fogging revealed a 99.4% reduction in Relative Light Units (RLU).

In July 2020, ECAS was also tested by Perfectus Biomed in Cheshire, UK. According to BS EN 14476:2013+A2:2019, a European standard quantitative test method for coronavirus, ECAS showed strong viricidal activity under clean test conditions, demonstrating a greater than log 4 reduction of the viable coronavirus even at dilutions of up to 1%.

Xylem's pump system development expertise partnered with GEG's innovative ECAS continues to evolve. "ECAS fogging is going to be an important tool in keeping our spaces and places free from the virus, and we are proud to partner with Xylem to deliver new, sustainable solutions to the disinfection market," Morgan said.

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The ECAS fogging system has proven to be effective in the disinfection of large enclosed spaces such as vehicles.