KLARAN

Improving Value for Water Cooler Distributors:

Meeting New Water Hygiene Demands and Reducing Unplanned Service Visits by Using UVC LED Reactors

Overview

Water cooler distributors are getting more requests from customers for disinfection and hygiene solutions and are competing for new contracts based on the availability of this feature. Globally, there's increasing demand for assurances of the hygiene and microbial safety of water served from coolers and dispensers as water quality incidents occur more frequently.

In the past, adding verified water disinfection claims would sharply increase the initial and operating costs of coolers. The lack of reliability from existing technologies that offer disinfection raises the likelihood of unplanned service visits, while the associated service costs could wipe-out years of profit on a single contract. This has made it challenging for distributors to offer coolers and accessories with disinfection that meet customer price expectations or maintain healthy contract margin.

This eBook will show you what is driving the demand for water hygiene, how UVC LED systems are suited to meet these demands, and options for adding UVC LED water disinfection systems to new or existing coolers.

Why are coolers a critical challenge for water hygiene?

Carbon filtration in point of use coolers on its own removes chlorine and many contaminants, but not bacteria, which allows water inside the cooler to support unrestricted bacterial growth and biofilm formation. This compromises dispensed water hygiene and can be a culprit of outbreaks. Cooler cleaning and sanitization procedures can remove this microbial load intermittently, but offer no assurance of day-to-day dispensed water hygiene to the customer.

The Growing Demand for UVC Disinfection

Consumers are becoming more aware of water quality incidents, resulting in greater demand for better quality in drinking water systems. These statistics indicate the growing demand for UVC disinfection:

- Contaminated drinking water is the third largest health concern in the U.S.[1]
- 50 percent of all building water systems can contain Legionella [2]
- Legionella is the top health burden of all waterborne pathogens in the EU [3]

Challenges with Providing Disinfection using Traditional UV Lamps and Microbial Filters

Cooler manufacturers offer various technologies that make hygiene claims, but they come with predictable and unpredictable costs that are passed down to the customer.

UV LAMP
Prone to unpredictable lifetimes during operation
Maximum service life of 6-12 months before lamp replacement
Delay in disinfection performance and water dispensing when lamp is turned on
When lamp is left on, can lead to warm water being served and scale build-up

MICROBIAL FILTER CARTRIDGE
Prone to clogging and reduced water flow from fluctuation in water quality
Maximum service life of 3-12 months before cartridge replacement
Can remove natural minerals that are essential to the taste of water

Not surprisingly, these issues can lead to a wide range of problems, including failure during business hours, increased annual overhead costs, the risk of serving contaminated water, as well as costly and unpredictable emergency service visits.

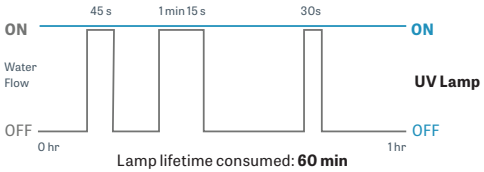
With these options, the reduced reliability (compared to the rest of the cooler components) leads to more frequent service visits—whether planned (to assure proper operation) or unplanned (to fix problems as they arise). While a replacement UV lamp or cartridge might be a small cost, the service costs (e.g. time, fuel, and vehicle) associated with an off-route visit can escalate quickly.

UVC LED Reactors Provide a More Reliable and Valuable Disinfection Solution

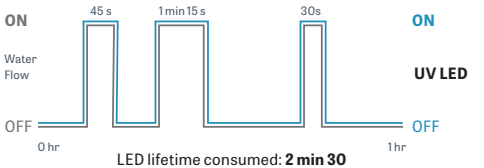
UVC LED reactors are an alternative solution for providing water disinfection and hygiene claims in point of use coolers. The highly predictable output of Klaran UVC LEDs ensures higher reliability in the field and longer lifetime, resulting in lower service costs and operational costs in the long-run.

Here's how it works:

UV lamps or filter cartridges need to be replaced on a time schedule. Klaran UVC LED reactors, on the other hand, only need to be replaced after a certain volume of water is dispensed from a cooler. Whereas UV lamps or filter cartridges last for months, Klaran UVC LED reactors can last for years without replacement or maintenance time and costs. If you're wondering how this is possible, it's because Klaran UVC LEDs can instantly be turned on and off, tens of thousands of times, without degrading disinfection performance.



Lamp lifetime consumed: **60 min**



LED lifetime consumed: **2 min 30**

Value Benchmark: Klaran AKR UVC LED Reactor for Coolers

Validated by third-party testing, Klaran AKR provides greater than 99.9 percent reduction of Pseudomonas, E. Coli, and Legionella over the lifetime of most POU water coolers.

Dispensing Flow Rate	2 Liters per Minute
Total Dispensed Water Capacity	36,000 Liters
Cost per Liter of Dispensed Water	$0.0016 USD

How long will a UVC LED reactor last?

Klaran's Application Engineers work directly with your unit's specifications and usage scenarios to determine reliable estimates. If you'd like to get an initial, conservative estimate for the Klaran AKR based on your needs, use the steps outlined below:

What is the capacity rating of your cooler filtration cartridge? [Your Liters]

How often do you replace your cooler filtration cartridge? [Your Months]

The equation then used is:

36,000L/[Your Liters] * [Your Months] = The shortest potential lifetime of the Klaran AKR in your cooler

For example, coolers replacing a 3,000L filtration cartridge every six months will be able to rely on the performance of a Klaran AKR for six years.

Getting the Value of UVC LED Reactors in Water Coolers

Klaran UVC LED reactors can improve the value of disinfection offerings in distributors' portfolios today and prepare distributors with an ideal accessory to help win new or renegotiated contracts that emphasize the desire for water hygiene.

For Coolers from the OEM:

Klaran works with distributors and their OEMs to integrate UVC LED reactors into coolers. This brings trusted partners together to strengthen distributors' portfolios and better serve customer demands.

For Purchased Coolers or Legacy Coolers in the Field:

A distributor's existing customer base and investment in cooler units are often its most valuable assets. Whether you're trying to attract new customers or better serve your existing base, having a UVC LED water hygiene accessory that integrates with your existing cooler base is a compelling option. Klaran offers components that enable seamless integration of the AKR into most coolers and can be completed by technicians in the warehouse or the field.

To get a more detailed estimate, visit Klaran.com and contact our team today.

Conclusion

As water cooler distributors face growing demand to provide reliable solutions for dispensing hygienic water, UVC LED-based systems are replacing traditional disinfection technologies. When evaluating UVC LED reactors, companies rely on Klaran's Application Engineering team to get hands-on support for implementing and testing this technology. Having access to an international, experienced team of Application Engineers can make a profound difference for distributors and OEMs alike by helping them better understand the technology, perform the proper testing, and integrate it into their new or existing products.

Now that you know more about the value of UVC LED reactors for water coolers (and have an initial estimate for the potential lifetime of a UVC LED reactor in your cooler), contact Klaran to start a conversation.

For more information, visit Klaran.com.

Endnotes

1 https://www.kff.org/health-reform/press-release/flint-fallout-water-supply-safety-now-near-top-of-publics-national-health-concerns-trailing-cancer/

2 https://awwa.onlinelibrary.wiley.com/doi/10.1002/opfl.1141

3 https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1531209398530&uri=CELEX:52017PC0753

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