

# aquisense technologies



- Advanced UV-C LEDs
- Patented Reactor Design
- Replaceable UVinaire
- Chemical & Mercury Free

PearlAqua™ Water Treatment

[www.aquisense.com](http://www.aquisense.com)



# Future of UV

## LEDs



### Wavelength Selectivity

UV-C LEDs are monochromatic and available in multiple wavelengths. This affords targeted performance for specific water-borne pathogens.



### Temperature Independent

LEDs do not transfer heat to the water, thus limiting fouling and ensuring a constant UV output regardless of water temperature.



### Low Power

Power consumption is reduced due to efficient reactor design and intermittent flow capabilities.



### Chemical Free

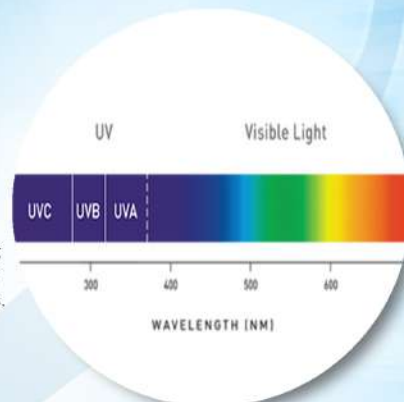
UV provides physical treatment without the use of harmful chemicals.

## UV



### No Disinfection By-Products

No risk of harmful disinfection by-products being generated as with chemical treatment.



### Low Maintenance

Robust technology that is easy to use and maintain.



### Pathogen Inactivation

Effective against a wide range of water-borne pathogens, including chlorine resistant organisms such as Cryptosporidium and Giardia.



### Mercury Free

Conventional UV lamps contain mercury, but UV LEDs are free of hazardous materials which eliminates risk of mercury spill due to lamp breakage.

## PearlAqua™ Evolution of Perfection

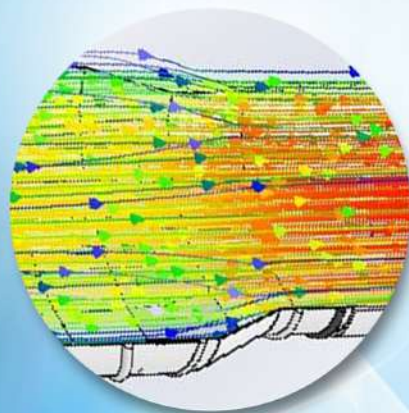
AquiSense Technologies combines over 50 years of UV disinfection expertise with 15 years of LED research to develop the PearlAqua. First introduced in 2012, PearlAqua is the world's first UV-C LED product designed for water disinfection.

## Reactor



### Patented Flow Design

Advanced design of the PearlAqua is based on years of UV-C LED research.



### Cost Effective

Advanced reactor design using computational fluid dynamics and advanced materials greatly enhances overall system efficiency -- higher flow rates at lower power.

## UVinaire™



### Integrated Sensors

Optional UV Intensity sensor available for real time monitoring of disinfection performance. Visual and electronic interface for indication of lamp operation and alarm conditions.



### Replaceable

Easily replaced without special tools.



### Safety Interlock

Safety switch ensures LEDs automatically turn off when UVinaire is removed.



### Data Logging

On board storage of lamp usage, temperature, on/off times, and intensity values.



### Long Lamp Life

10,000-hour lamp life. Replacement intervals can be extended for several years due to its intermittent flow capability.



### Compact Footprint

High power density UV-C LEDs and advanced electronic controls allow for smaller footprint compared to traditional UV systems.



### Instant On/Off

Intermittent flow friendly with remote start/stop. This saves energy and eliminates risk of overheating during no flow events.



### Easy Installation

Plug-and-play with limited technical know-how. Fewer components, robust design and easy interface.



### Unlimited Cycling

Lamp life is not effected by on/off cycles, allowing for unlimited lamp cycling. Gas discharge UV lamps can only be cycled a few times a day without impacting lamp life.

## Applications



Transportation



Food/Beverage



Industrial



Life Sciences



Commercial/Residential



# PearlAqua Water Treatment



## PearlAqua

### OVERVIEW

- Flagship plug & play device with robust construction
- Flow rates up to 12 LPM
- Higher flow rates can be addressed with multiple units in parallel
- Disinfection performance third party validated

### FEATURES

- Self-contained in one unit (reactor, light source, ballast, and controls)
- State of the art UV-C LEDs with lamp life up to 10,000 hours
- Removable UVinaire lamp module with safety interlock, heatsink, and cooling fan
- Stylish robust stainless steel shell
- External indicator lights for alarm conditions
- Digital and analog I/O
- Optional UV Intensity sensor



## PearlAqua OEM

### OVERVIEW

- System engineered to be integrated into products and processes
- Flow rates up to 12 LPM
- Higher flow rates can be addressed with multiple units in parallel
- Disinfection performance third party validated

### FEATURES

- Self-contained in one unit (reactor, light source, ballast, and controls)
- State of the art UV-C LEDs with lamp life up to 10,000 hours
- Removable UVinaire lamp module with safety interlock, heatsink, and cooling fan option
- External indicator lights for alarm conditions
- Digital and analog I/O
- Optional UV Intensity sensor



## PearlAqua Micro

### OVERVIEW

- POU system for integration into products and processes
- Flow rates up to 4 LPM
- Higher flow rates can be addressed with multiple units in parallel
- Disinfection performance third party validated

### FEATURES

- Self-contained in one unit (reactor, light source, ballast, and controls)
- State of the art UV-C LEDs with lamp life up to 10,000 hours
- Highly configurable with water and electrical connections, cooling, and UV-C output power

# PearlAqua Specifications

	PearlAqua Micro		PearlAqua OEM			PearlAqua		
	3B, 6B	9C, 12C	9D	15E	24G	9D	15E	24G
Nominal Max Flow [lpm (gpm)]	0.5 (0.1) 1.5 (.4)	3.0 (0.8) 4.5 (1.1)	3.0 (0.8)	8.5 (2.2)	14.0 (3.7)	3.0 (0.8)	8.5 (2.2)	14.0 (3.7)
Headloss at Max Flow [psi (mBar)]	0.6 (41)	2.4 (166)	1.16 (80)	0.73 (50)	0.29 (20)	1.16 (80)	0.73 (50)	0.29 (20)
Inlet/Outlet Connection	3/8" Tube	3/8" Tube	1/4" push to connect	3/8" push to connect	1/2" FNPT	1/4" push to connect	3/8" push to connect	1/2" FNPT
Weight [kg (lbs)]	0.07 (0.16)	0.16 (0.35)	0.60 (1.3)	0.76 (1.7)	2.08 (4.6)	0.74 (1.6)	0.92 (2.0)	2.44 (5.4)
Dimensions [mm (in)]	45x45x97 (1.7x1.7x3.8)	61x61x113 (2.4x2.4x4.4)	67x79x100 (2.63x3.11x3.93)	80x92x100 (3.15x3.62x3.93)	120x133x140 (4.72x5.24x5.51)	73x92x100 (2.87x3.62x3.93)	87x92x100 (3.43x4.13x3.93)	127x148x140 (5.00x5.83x5.51)
Max Pressure [psi (bar)]	116 (8)		100 (6.9)					
Input Power [W]	2.4-4.8	7.2-9.6	7.0	12.0	19.0	8.6	13.6	21.0

Specifications subject to change  
Custom specification options available

## Product Certification



Microbiological testing in accordance with US EPA drinking water guidelines.



System Tested and Certified by WQA against NSF/ANSI-61 for material safety only.  
Certified to NSF/ANSI-372 for lead-free compliance.



AquiSense is a proud supporter of the International Ultraviolet Association

## AquiSense: Committed to Quality

AquiSense Technologies is the global leader in UV-C LED systems design and manufacture. They work with leading LED manufacturers to evaluate their devices and then deploy them into efficient disinfection products. Using a combination of patented technology and in-depth know-how, AquiSense integrates LED devices into products that solve real world problems in water, air, and surface applications. AquiSense Technologies is a wholly owned subsidiary of Nikkiso America Inc. and is a part of the Nikkiso Group of companies.



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