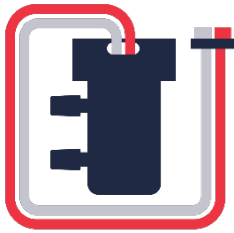


Klaran WR Series In-line LED Reactor



QUALITY DISINFECTION ON-DEMAND

Capable of providing 4 Log Reduction of *pseudomonas aeruginosa* (99.99%) and 3 log reduction (99.9%) of *E. Coli* at a flow rate of 2 liters per minute

LONGER LIFE AND HIGHER RELIABILITY

On-demand Klaran UVC LEDs provide optimal useful control, lifetime, reduced energy consumption and a replacement cycle that matches your business needs

ECO-FRIENDLY AND COST-EFFECTIVE

Klaran WR is a mercury-free, chemical-free, and effluent-free solution for point-of-use water treatment systems, and ensures water quality for less than one quarter of a penny per liter dispensed. RoHS compliant and no mercury

Features

The Klaran WRI is a UVC LED-based water treatment product that delivers reliable drinking water for consumer and commercial purifiers. This product offers mercury free, environmentally friendly disinfection that does not alter the taste or smell of drinking water. With the Klaran WRI, OEMs can standardize their UV disinfection hardware with the flexibility for differentiated performance and features to work across product portfolios.

Model Numbers

Model	Description
WR2-24V-2U-B1	WRI unit assembled, 24VDC power input



Klaran WRI LED Reactor

Product Characteristics

	US Measurement	Metric Measurement
Size	4.09 x 2.25 in	104 x 57 mm
Weight	4.4 oz.	125 g
Inner Volume	1.28 fl oz.	38 cm ³
Flow Rate	0.13 – 1 Gallons per minute	0.5 – 3.8 Liters per minute
Inlet and outlet fittings	3/8" push fittings	0.953 cm push fittings
Power options	24V DC input	

Electrical Characteristics

	Unit	Value	Note
Power Adapter			
Input Voltage	VDC	Min: 22.8 Typ: 24 Max: 25.2	Constant DC
Wattage	W	Typ: 8	
WR Unit Electrical Characteristics			
Electrical Connections	in cm	0.25" 0.635 cm	Fasten Male Terminal
Unit voltage	VDC	24	
Power consumption (Operation)*	W	Min: 4.5 Typ: 8 Max: 12.5	
Power consumption (Stand-By)	mW	Typ: 3	

*It is recommended to check if the power consumption is within the specified values after installation in the system

Mechanical Characteristics

Characteristic	Unit	Value	Note
Major Dimensions	in mm	4.11" x 2.24" in 104.4 x 57 mm	
Inlet water fitting (Tube OD)	in cm	3/8" Female NPT Threading 0.953 cm	
Outlet water fitting (Tube OD)	in cm	3/8" Female NPT Threading 0.953 cm	
Pressure drop	PSI kPa	0.58 PSI 4 kPa	At 0.528 GPM 2 LPM with 3/8" Connectors
Total internal water volume	fl oz cm ³	1.285 fl. Oz 38 cm ³	
Maximum Ambient Temperature	°F / °C	104°F 40°C	

Inlet Water Specifications

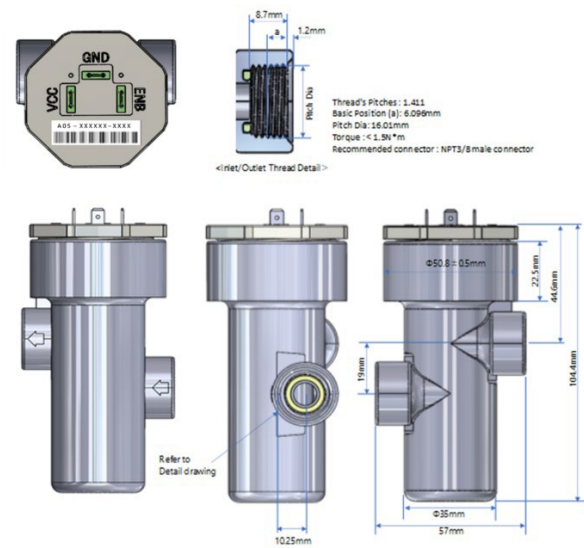
Characteristic	Unit	Value	Note
Flow rate range	GPM LPM	0.13 – 1 Gallons 0.5 – 3.8 Liters	
Maximum pressure rating	PSI kPa	100 689.476	
Minimum flow to trigger Disinfection On	GPM LPM	0.13 Gallons 0.5 Liters	
UV (265 nm) Transmittance	%/cm	Min: 95% Typ: 97%	
pH Range	pH	6.0 – 8.5	Carbonated water can be treated at a pH under 6.0.
Water Temperature Range	°F / °C	> 41-104°F > 5-40°C	Freezing must be prevented
Relative Humidity	%	Min: 40 Typ: 55 Max: 75	Non-condensing environment

*Inlet water should be filtered by an at least 5 micron or equivalent filtration cartridge before entering the Klaran WRI Unit



Klaran WRI LED Reactor

Mechanical Dimensions



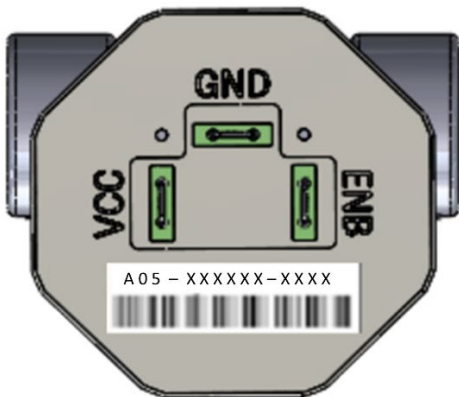
Installation Orientation

The disinfection performance was confirmed with the head upside. To ensure the air bleeding inside the module, it is recommended to install the module with the head upside for vertical installation or the head tilted up at least 5 degrees for horizontal installation.

If the module is installed with the head down, the air inside the module will not escape and the performance will get down.



Electrical Connections Diagram



Head caps have rotating tolerance ±10 degree

Input terminal names and functions

Terminal	Symbol	Unit	Value	Note
Voltage Common Collector	VCC	DC V	Min: 22.8 Typ: 24 Max: 25.2	
Ground	GND	DC V	Typ: 0	GND = 0V (Reference Potential)
Enable	ENB	DC V	Min: 2.5 Typ: 3.3 Max: 5.0	H = 3.3 V (Typ), L = GND = 0V (Typ), H: LED ON, L: LED OFF



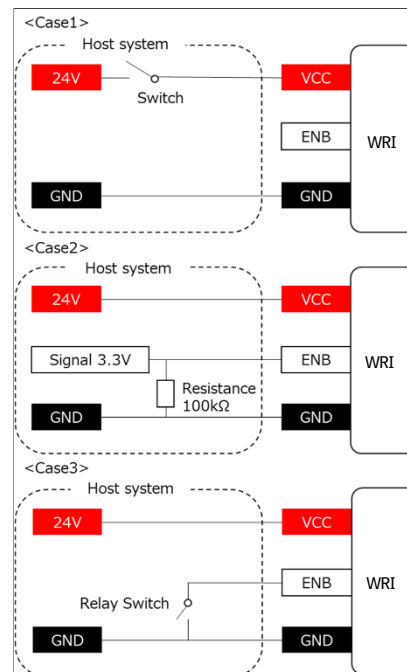
Klaran WRI LED Reactor

Operating Cases

Case	Connection	Vcc	ENB	LED
Case 1	VCC/GND (ENB is not used)	24V	OPEN	ON
		0V	OPEN	OFF
Case 2	VCC/ENB/GND	24V	3.3V	ON
		0V	3.3V	OFF
Case 3	VCC/GND (ENB is connected to GND via relay switch)	24V	0V	ON
			OPEN	OFF
		0V	GND	ON
			GND	OFF

Values are typical recommended values

It is recommended to install a 100kΩ pull down resistor between ENB and GND.



Packaging Contents

1 x Klaran WRI Unit

Packaging Dimensions

Contact Crystal IS for package, case, and pallet specifications



Klaran WRI LED Reactor

Handling and Operation Precautions

The Klaran WRI is available for purchase, installation, and service by professional providers of water conditioning and plumbing systems and services. Klaran WRI is not for consumer or stand-alone use and must be installed into a properly installed and operating water conditioning or plumbing system.

- The Klaran WRI contains microelectronic components sensitive to shock, moisture, and operation in conditions beyond stated maximums. Care should be taken in handling the Klaran WRI during shipping, handling, installation and operation.
- The Klaran WRI is ESD (electrostatic discharge) sensitive; static electricity and surge voltages seriously damage internal components and can result in product failure.
- Use proper ESD protection, including grounded wrist straps, ESD footwear and clothes when handling the Klaran WRI.
- Ensure that tools, jigs and machines being used are properly grounded and do not exert excessive force upon the Klaran WRI.
- Do not use WRI if dropped.
- Pre-filtration should be used before the Klaran WRI that can assure inlet water is of sufficient quality to meet required specifications. Operating without pre-filtration may lead to a reduction of disinfection performance or damage to the Klaran WR2.
- The Klaran WRI should be filled with water during LED ON operation. Operating the Klaran WRI dry for extended periods may cause permanent damage.
- The Klaran WRI should be flushed with flowing water for a minimum of two minutes before use after initial installation or for any occurrences of electrical power loss longer than 12 hours.
- The Klaran WRI should not be modified or disassembled in any way. Doing so may result in damage, hazardous operation conditions, and Ultraviolet (UV) light exposure hazards.
- Ensure circuit power is off before connecting Klaran WRI.

DISCLAIMER

The specifications, characteristics, and technical data presented in the datasheet are subject to change without prior notice. It is recommended that the most updated specifications, characteristics, and technical data be used in your application.

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