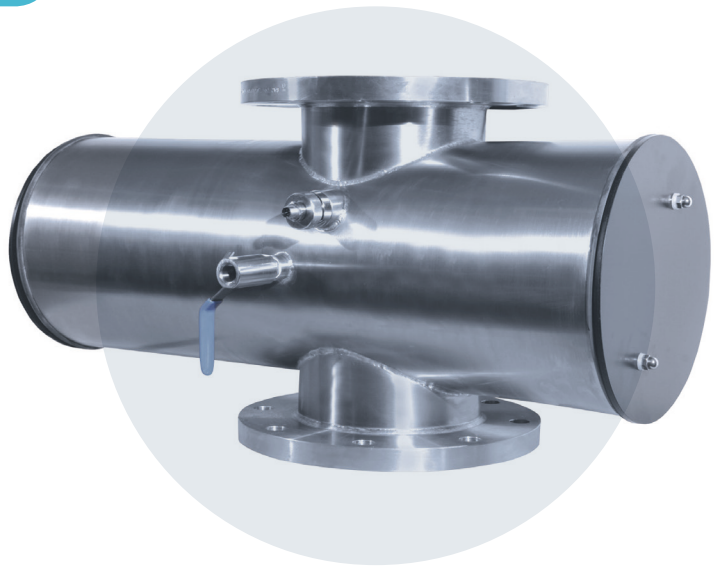
We UVCare...

Application Optimized UV for Aquaculture

RASLINE PQ IL



NVI approved UV treatment for aquaculture

Our RasLine PQ IL systems are aimed specifically at providing UV disinfection for recirculating aquaculture systems. By using an NVI approved UV system you can be certain that the UV dose being produced will disinfect the water, eliminate harmful micro-organisms, reduce the bio-burden, protect against bio-fouling and lower operating costs. Each system comes with a certified dry UV sensor allowing checking of UV performance. The UV sensor measures the germicidal output of the UV system and a UV dose read out makes it easy to monitor and log performance. The control system also has the ability to take flow and transmittance meter inputs and calculate the UV dose based on real time operating conditions.

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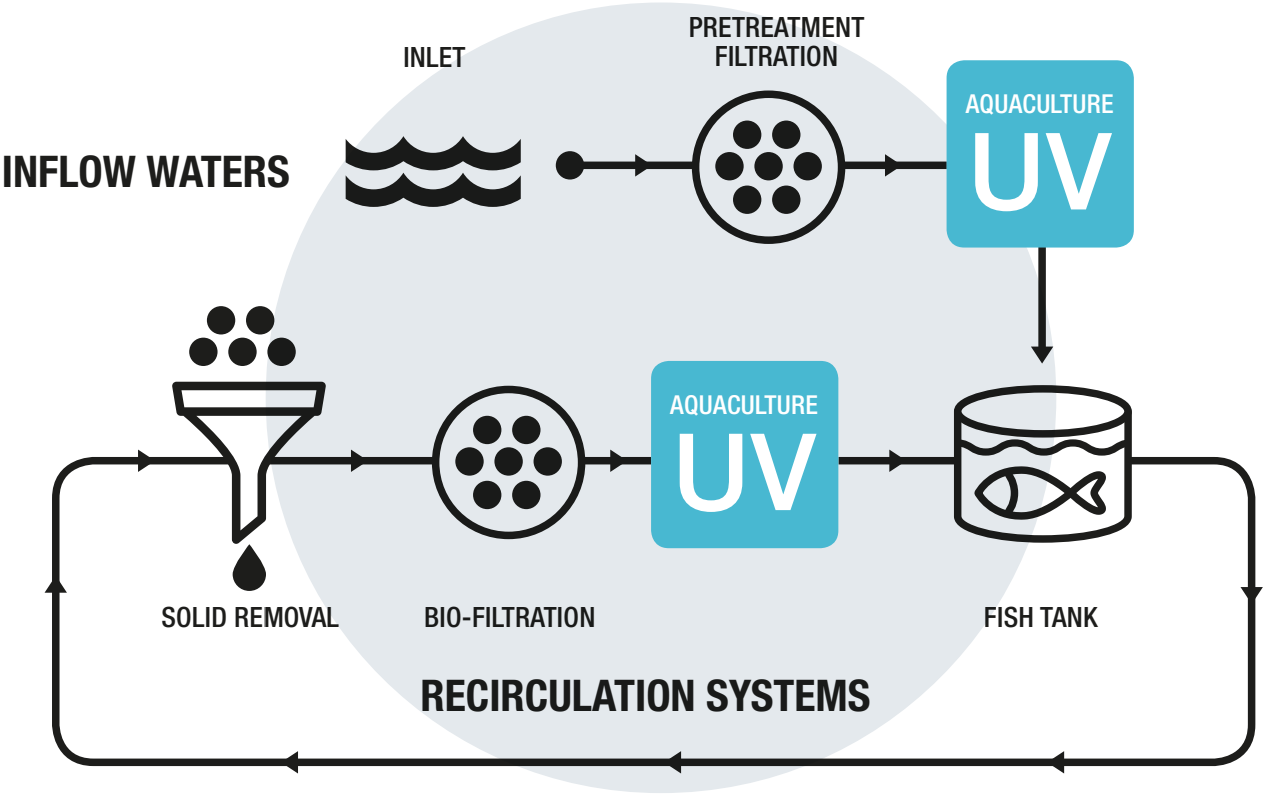
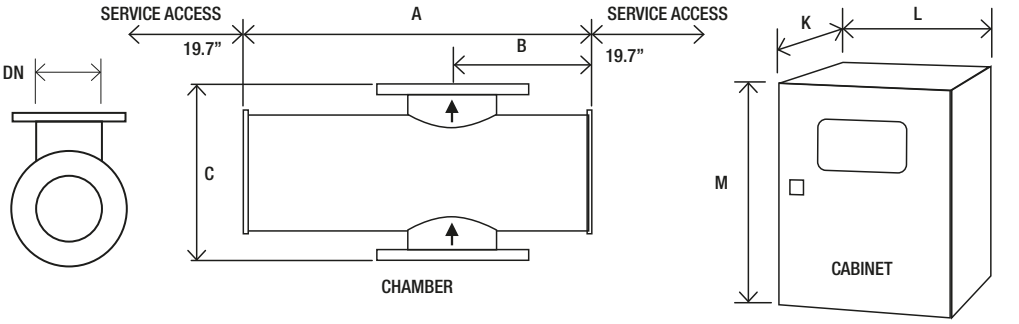
Aquaculture inflow/recirculation process diagram



KEY FEATURES	WHAT IT GIVES YOU	BENEFITS FOR YOU
INTELLIGENCE		
Dry DVGW approved UV sensor measuring germicidal wavelengths	Continuous verification of performance with real time RED dose reading and in-built low dose warning	Easy to monitor and log system performance
Flow and UV transmittance (UVT) meter inputs	Dose reading based on actual process conditions when meters are connected	Accurate UV dose reading guaranteed under wide range of operating conditions
OPTIMIZATION		
Third party bioassayed UV systems approved by the Norwegian Veterinary Institute (NVI)	UV system dose equations and sizing have been independently derived	Confidence the system will perform as stated
UV water disinfection	Protect your fish, your processes and the environment from harmful contamination without resorting to chemicals.	Proven performance
		No chemicals
Designed for the treatment of aquaculture water	Constructed of 316L stainless Steel wetted parts, also available in Super Duplex construction for sea water applications	Industry compliant materials
	*Chamber with flanged connections and < 0.8 µm internal finish	Designed to international standards
	*Automatic wiper (quartz cleaning)	Self cleaning to maintain performance
INTEGRATION		
Compact design	Can be retrofitted to existing process	Easy integration

No options, but standard features



* Allow dimension L in front of cabinet for door opening and panel access.
** M dimension includes the space for the cabinet mounting brackets but you need to allow space below the cabinet for cable entry and access (minimum of 9.8" mm).
*** CC: Control cabinet, PC: Power cabinet
[a] Attention: the optional cabinet with A/C is bigger. Ask for dimensions.
All dimensions are approximate for clearance purposes only. We have a policy of continuous product development, exact drawings are available on request. All specifications are subject to change without notification. Your distributor or our account manager can advise on correct sizing and specification requirements.

			Dimensions (Inches)								Approx weight (lb)	
			Chamber				Cab.	Cabinet (fan cooled)[a]			Chamber	Cabinet
Model Number	Max. power (kW)	No of lamps	A	B	C	DN	No***	K*	L	M**	Empty	Fan cooled
RASLine PQ IL 450	5.6	2	30.7	12.2	15.7	8	1	11.8	39.4	47.2	172	176.4
RASLine PQ IL 1000	11	4	30.7	12.2	15.7	8	1	11.8	39.4	47.2	172	220.5
RASLine PQ IL 4000	17.5	4	35.3	14.5	21.6	13.8	1	23.6	39.4	82.7	330.7	396.8
RASLine PQ IL 4500	26	6	35.3	14.5	21.6	13.8	1	23.6	39.4	82.7	330.7	441
RASLine PQ IL 12000	39	6	41.4	17.5	26.8	19.7	1 CC	15.7	23.6	78.7	529.1	286.6
							1 PC	23.6	47.2	82.7		573.2
RASLine PQ IL 14000	52	8	41.4	17.5	26.8	19.7	1 CC	15.7	23.6	78.7	529.1	286.6
							1 PC	23.6	47.2	82.7		639.3

UV CHAMBER

Material:	StSt 316L / 1.4404
Internal finish:	< 0.8 µm Ra, welds as laid, electropolished and passivated
External finish:	Brushed to K280, electropolished and passivated
Process (mating) connections:	Flange EN 1092-1 PN10
Drain connection:	BSP socket
End plate:	Removable end plate
Degree of protection:	IP54 equivalent to NEMA 12
Wiper:	Automatic (electrically driven)
Arc tube (lamp):	Medium pressure
Arc tube enclosure:	Doped quartz
Number of arc tubes (lamps):	2 (PQ IL 450), 4 (PQ IL 1000-4000), 6 (PQ IL 4500-12000) 8 (PQ IL 14000)
Expected lamp life:	9000 hours
Temperature sensor:	Yes
UV sensor:	Dry DVGW compliant UV sensor (one per lamp)
Working fluid temperature:	34°F to 140°F
Hydrostatically pressure tested:	Yes
Chamber mounting:	Flow horizontal or vertical (lamps horizontal only)
Operating pressure:	6 bar
Seals:	EPDM, ADI free, EC 1935/2004, FDA 21 CFR 177.2600 approved

OPTIONS

- Document Support Pack
- Cabinet material: Stainless steel 304 or 316 with sloping roof
- Operation and Maintenance manual and printed Installation and Commissioning manual in Chinese, English, French, German & Spanish
- Flange options: PN16, ANSI 150, JIS, Table ‘E’
- Lead length: 65.6 and 95.1 ft
- In-field UV reference sensor kit
- Bleed: valve with BSP connection
- Control cabinet: Air conditioning in stainless steel raises control ambient limit to 122°F (in shade) IP rating 65 (NEMA 4X)
- Water leak detection: Detects water leaks from quartz sleeve
- Water level sensor: UV chamber full water detection
- Operating pressure: 10 Bar

OPTIONS (CONTINUED)

- Aggressive water package: For 400 ppm to 20000 ppm chloride water

CABINET (FAN COOLED)

Material:	Polyester coated carbon steel, RAL 7035
Degree of protection:	IP54 (NEMA 12)
Supply voltages:	PQ IL 450-1000: 200-277 V (2ph L1,L2 or 1ph L1+N) PQ IL 4000-14000: 400-480 V (3ph L1, L2, L3) 50/60 Hz (voltage tolerance ±10% of nominal)
Operating temperature range:	41°F to 95°F
Relative humidity:	<95% non-condensing
Cooling fans:	Yes
Interconnecting cable:	32.8 ft
Variable power:	Stepless variable power (70% reduction from maximum ballast power)

HMI / CONTROL

Display:	4 line LCD, indicating system status including alarms
Operating menu:	3 levels (2 with password protection)
Fault finding:	Event log

CUSTOMER OUTPUTS

4-20 mA passive output:	UV dose, UV intensity, ballast power
VFC outputs:	Standby in remote, system standby, system cooling down, any trip, any warning, UV dose failure, system ready, wiper failure, lamp failure, water leak, water temperature warning, Full water detection, water & cabinet temperature alarm

CUSTOMER INPUTS

4-20 mA active or passive inputs:	Flow meter and UVT transmittance meter
VFC inputs:	Remote stop/start, remote clear message, remote wipe, remote set power high

CUSTOMER COMMUNICATIONS PORT

- Modbus RS 485 serial RTU for SCADA connection

APPROVALS

- CE marked, UL 508A shop, NVI approved

RASLINE PQ IL

Also available in our Aquaculture product range...

RASLINE D EO

Energy Optimized general disinfection suitable for clear waters

RASLINE D PH

Suitable for a wide range of general disinfection applications across a range of UVTs and flows

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BERSON, HANOVIA & AQUIONICS WORKING TOGETHER AS PART OF THE HALMA GROUP.

Netherlands
t: +31 40 2907777
e: sales@bersonuv.com

Germany
t: +49 611 44575375
e: verkauf@hanovia.com

United Kingdom
t: +44 1753 515300
e: sales@hanovia.com

China
t: +86 21 61679599
e: china@hanovia.com

Malaysia
t: +60 16 440 8834
e: asia@hanovia.com

USA
t: +1 980 256 5700
e: sales@aquionics.com

Canada
t: +1 980.256.5700
e: sales@aquionics.com

Mexico
t: +1 980.256.5700
e: sales@aquionics.com

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