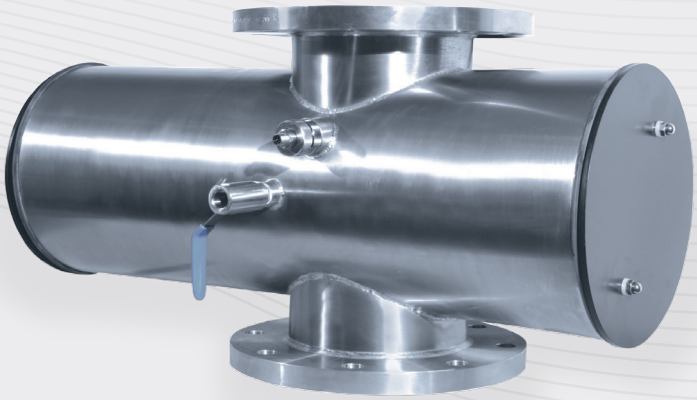
NUVONIC

formerly Aquionics, Berson, Hanovia and Orca GmbH



RASLine PQ IL

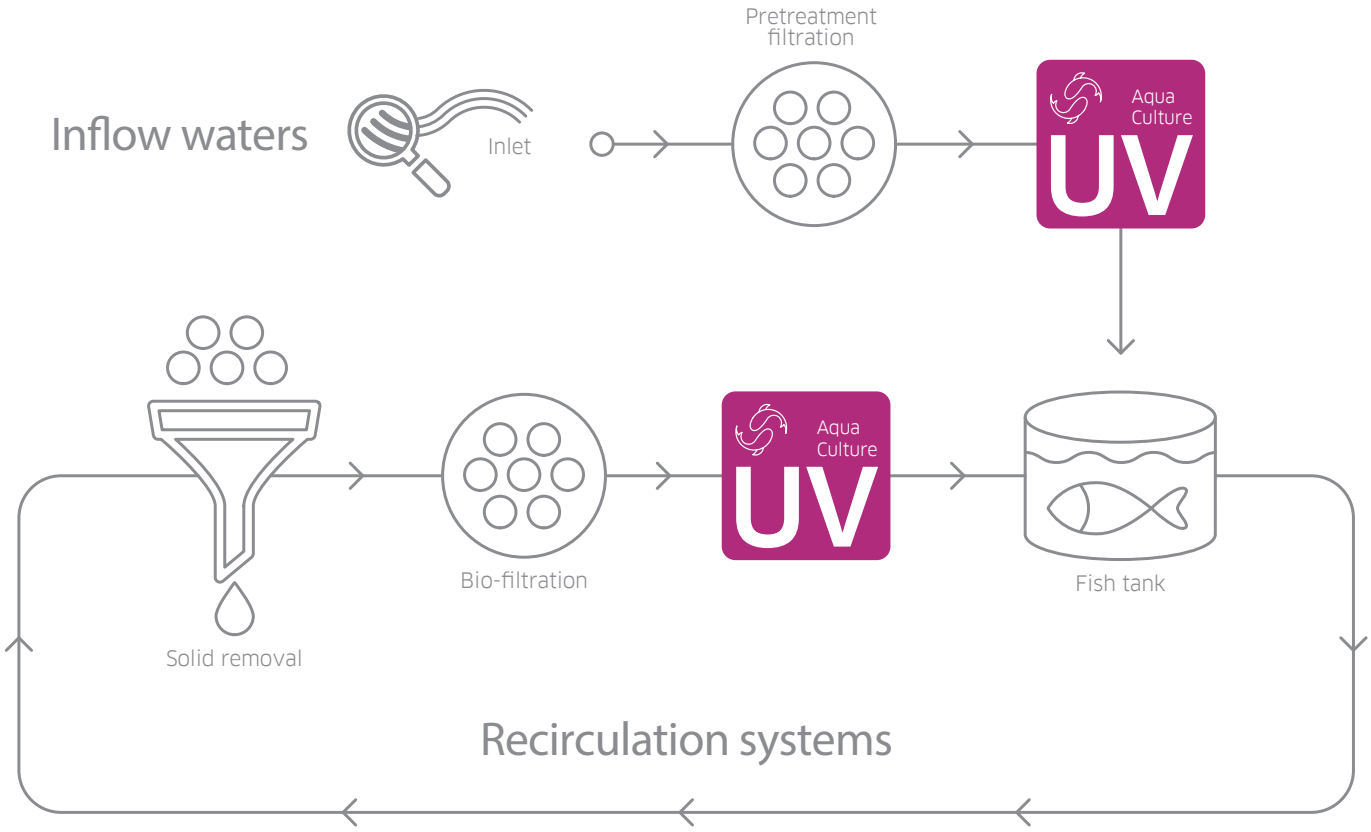
NVI APPROVED UV TREATMENT FOR AQUACULTURE

Our **RasLine PQ IL** systems are aimed speci ically at providing UV treatment for recirculating aquaculture systems. By using an NVI approved UV system you can be certain that the UV dose being produced will deactivating microorganisms, reduce microbial load, and support bio-fouling control within water systems. Each system comes with a certified dry UV sensor allowing checking of UV performance.

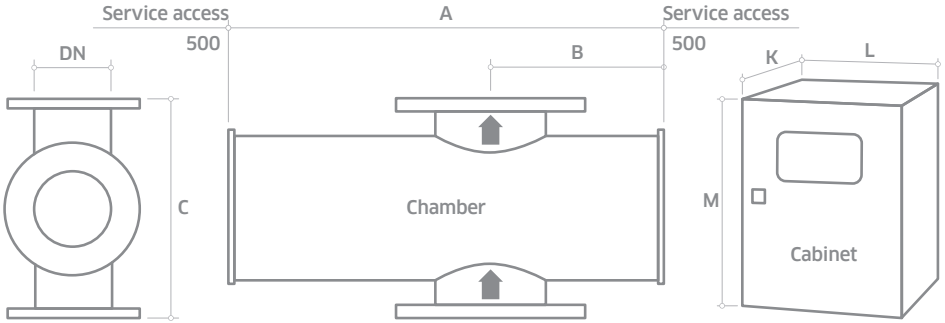
The UV sensor measures the germicidal output of the UV system and a UV dose read out makes it easy to monitor and log performance. The control system also has the ability to take low and transmittance meter inputs and calculate the UV dose based on real time operating conditions.

Application Optimised UV for Aquaculture

POTENTIAL LOCATIONS OF THE RASLINE PQ IL™ IN A RECIRCULATING AQUACULTURE SYSTEM (RAS)



KEY FEATURES	WHAT IT GIVES YOU	BENEFITS FOR YOU
INTELLIGENCE		
Dry DVGW approved UV sensor measuring 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
OPTIMISATION		
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 treatment	Support your fish, your processes and the environment	Proven performance
		No chemicals used
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



* 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 250 mm).

*** CC: Control cabinet, PC: Power cabinet 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.

MODEL NUMBER	MAX POWER (KW)	NO OF LAMPS	DIMENSIONS (MM)								APPROX WEIGHT (KG)	
			Chamber				Cab.	Cabinet (fan cooled)a			Chamber	Cabinet
			A	B	C	DN	No***	K*	L	M**	Empty	Fan cooled
RASLine PQ IL 450	5.6	2	780	310	400	200	1	300	1000	1200	78	80
RASLine PQ IL 1000	11	4	780	310	400	200	1	300	1000	1200	78	100
RASLine PQ IL 4000	17.5	4	896	368	550	350	1	600	1000	2100	150	180
RASLine PQ IL 4500	26	6	896	368	550	350	1	600	1000	2100	150	200
RASLine PQ IL 12000	39	6	1052	446	680	500	1 CC	600	600	2000	240	130
							1 PC	600	1200	2100		260
RASLine PQ IL 14000	52	8	1052	446	680	500	1 CC	600	600	2000	240	130
							1 PC	600	1200	2100		290

UV CHAMBER

Material:	StSt 316L / 1.4404
Internal finish:	< 0.8 µm Ra, welds ground out, electropolished and passivated
External finish:	Brushed to K280, electropolished and passivated
Process (mating) connections:	Flange EN 1092-1 PN10
Drain connection:	BSP socket or NPT if ANSI flange
Air vent connection:	BSP socket or NPT if ANSI flange
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 (F240)
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:	12000 hours
Temperature sensor:	Yes
UV sensor:	Dry DVGW compliant UV sensor (one per lamp)
Working fluid temperature:	1°C to 60°C
Hydrostatically pressure tested:	Yes
Chamber mounting:	Flow horizontal or vertical (lamps horizontal only)
Operating pressure:	6 bar (positive pressure only)
Seals:	EPDM, ADI free, EC 1935/2004, FDA 21 CFR 177.2600 approved

OPTIONS

- Document Support Pack
- Cabinet: Stainless steel 304
- Cabinet: Stainless steel 304 with air conditioning (5°-50°C), IP66 (NEMA 4X), relative humidity <95% non condensing*
- Cabinet: Stainless steel 316 with air conditioning with slooping roof (5°-50°C), IP66 (NEMA 4X), relative humidity <95% non condensing*
- 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: 20 and 29 m
- In-field UV reference sensor kit
- Bleed: valve with BSP connection or NPT if ANSI flange
- UL 508A shop approval
- Welder pack
- Skid mounting (not shipboard or earthquake zone)
- Halogen free cables

* See sales drawings for dimensions

OPTIONS (CONTINUED)

- Water leak detection: Detects water leaks from quartz sleeve
- Water level sensor: UV chamber full water detection
- Operating pressure: 10 Bar
- Aggressive water package: For 400 ppm to 20000 ppm chloride water
- UPS for controller (30 mins)

CABINET (CONTROLLER UVTOUCH™)

Material:	Polyester coated carbon steel, RAL 7035
Degree of protection:	IP54 (NEMA 12)
Supply voltages:	PQ IL 450-1000: 208-277V (+/-10%) 1L+N, 2L, 3L 50/60 Hz 360-480V (-5/+10%) 3L+N, 50/60 Hz PQ IL 4000-14000: 380-480V (-5/+10%) 3L, 3L+N 50/60 Hz
Operating temperature range:	5°C to 35°C
Relative humidity:	<85% non-condensing
Cooling fans:	Yes
Interconnecting cable:	10 m
Variable power:	Stepless variable power (70% reduction from maximum ballast power)

HMI/CONTROL

Display:	7" HMI, 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

RS 485 Industrial Ethernet

APPROVALS

CE marked, NVI approved

RASLine PQ IL

Also available in our Aquaculture product range...

RASLINE D EO

Energy Optimised general treatment

RASLINE D PH

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

Canada
+1 980 256 5700
americas@nuvonic.com

China
+86 21 6167 9599
apac@nuvonic.com

Germany
+44 175 351 5300
germany@nuvonic.com

Mexico
+1 980 256 5700
americas@nuvonic.com

United Kingdom
+44 175 351 5300
emea@nuvonic.com

USA
+1 980 256 5700
americas@nuvonic.com

NUVONIC

A Halma company

formerly Aquionics, Berson, Hanovia and Orca GmbH

©2023 Nuvonic 910435-3400-03-EN

nuvonic.com

FM 29365