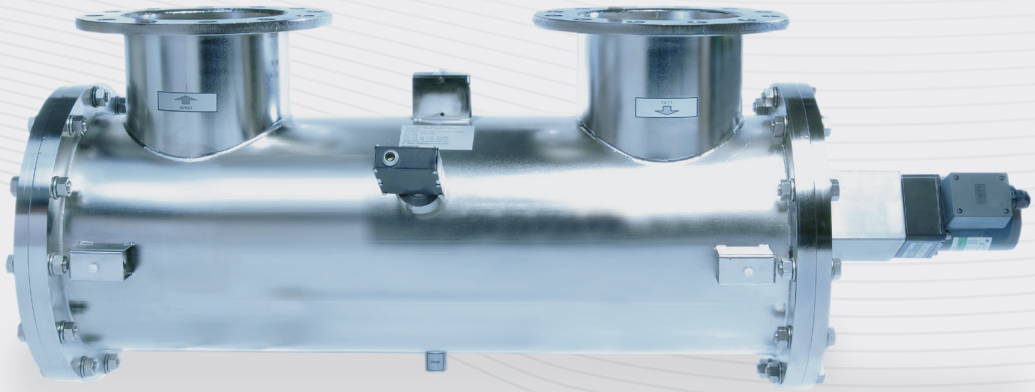
NUVONIC

formerly Aquionics, Berson, Hanovia and Orca GmbH



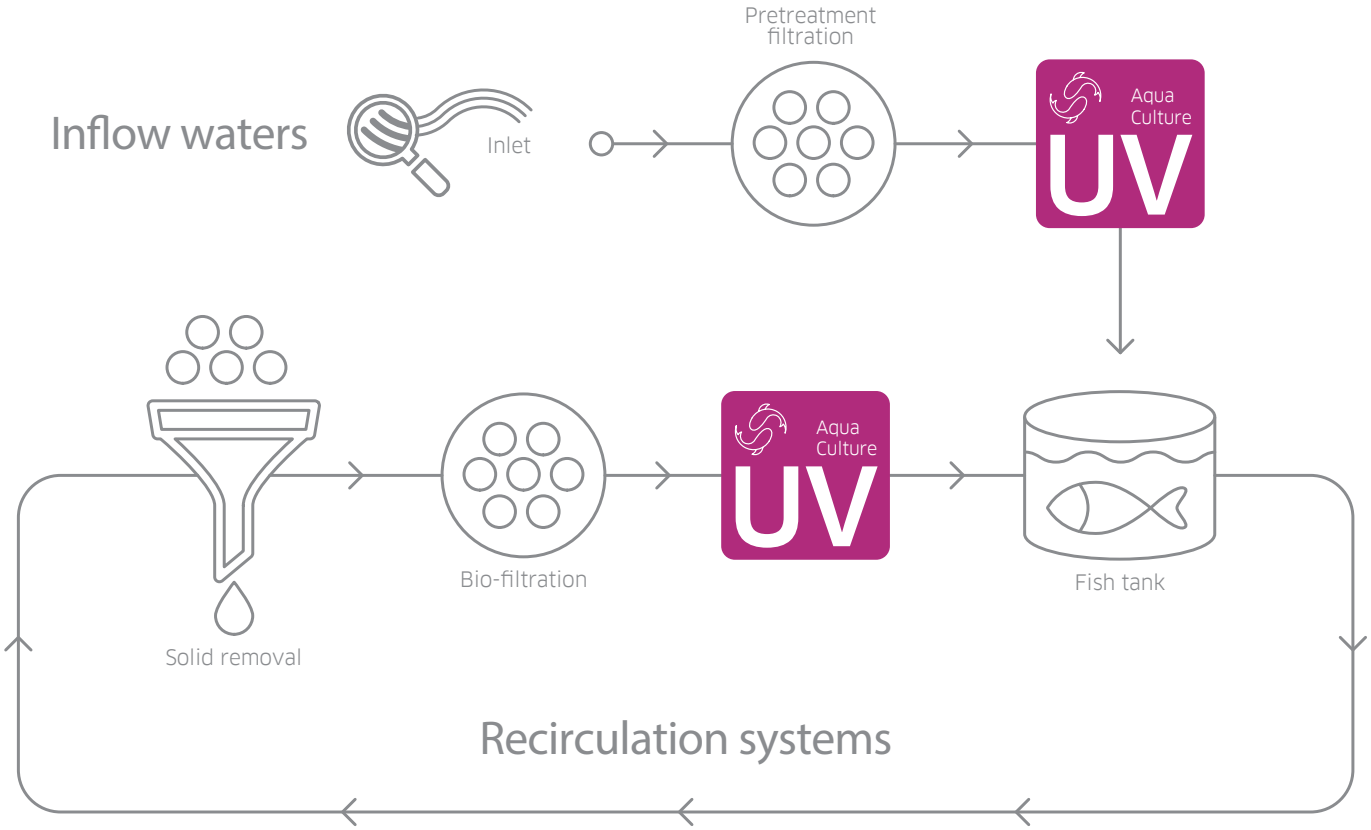
RASLine D PH

UV TREATMENT FOR AQUACULTURE

Our **RASLine D PH** systems are aimed specifically at providing UV treatment for product and process waters used in the aquaculture industry. By using a UV system you will eliminate harmful micro-organisms, reduce the bioburden, protect against bio-fouling and lower operating costs. Each system comes with a UV monitor to measure the active output of the UV system and make it easy to monitor and log performance.

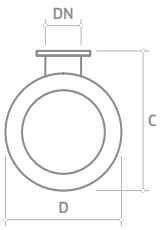
Application Optimised UV for Aquaculture

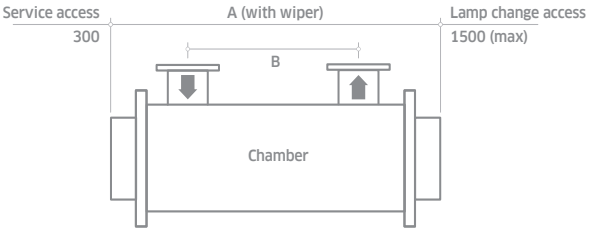
POTENTIAL LOCATIONS OF THE RASLINE D PH™ IN A RECIRCULATING AQUACULTURE SYSTEM (RAS)

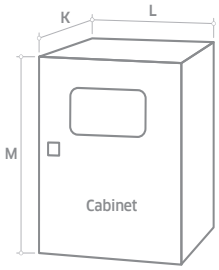


KEY FEATURES	WHAT IT GIVES YOU	BENEFITS FOR YOU
INTELLIGENCE		
UV intensity monitor measuring active wavelengths	Continuous verification of performance with in-built low intensity alarm	Easy to monitor and log system performance
OPTIMISATION		
UV water treatment	Protect your fish, your processes and 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
	Automatic wiper (quartz cleaning)	Self cleaning
INTEGRATION		
Compact design	Can be fitted to skids	Easy integration
	Can be retrofitted to existing process	

*Option







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.

* 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).

MODEL NUMBER	MAX POWER (KW)	MIN T10(%)	DIMENSIONS (MM)								APPROX WEIGHT (KG)	
			A	B	C	D	DN	K*	L	M**	Chamber (Empty)	Control Cabinet
RASLine D PH 0060	1.6	85	850	240	320	240	80	330	750	850	40	85
RASLine D PH 0080	2.7	91	1300	710	319	240	80	330	750	850	50	85
RASLine D PH 0083	2.7	91	1300	710	319	240	100	330	750	850	50	85
RASLine D PH 0095	4.4	81	1300	710	319	240	80	330	750	850	50	85
RASLine D PH 0100	4.4	81	1300	710	319	240	100	330	750	850	50	85
RASLine D PH 0209	4.4	90	1300	660	420	290	150	330	750	850	65	85
RASLine D PH 0240	5.8	84	1300	660	420	290	150	330	900	1100	65	85
RASLine D PH 0300	5.8	93	1300	610	505	410	200	330	900	1100	140	165
RASLine D PH 0400	16.5	62	1300	660	420	290	150	330	1100	1600	65	282
RASLine D PH 0550	16.5	62	1300	610	505	410	200	330	1100	1600	140	282
RASLine D PH 0900***	25.2	62	1300	550	505	410	250	330	900	1100	140	165
								330	1100	1600		282
RASLine D PH 0950***	33	62	1300	610	505	410	250	330	1100	1600	140	282
								330	1100	1600		282
RASLine D PH 0970***	33	76	1300	500	505	430	300	330	1100	1600	160	282
								330	1100	1600		282

UV CHAMBER

Material:	Stainless steel 316L / 1.4404
Internal finish:	As made pipe and tube, welds as laid, electropolished and passivated
External finish:	Sateen polish (120 grit) electropolished and passivated
Process (mating) connections:	Flange EN 1092-1 PN16
Drain connection:	BSPT or NPT if ANSI flange
End plate:	Removable end plate
Degree of protection:	IP65 equivalent to NEMA 4 but not for outside use
Wiper:	Automatic (electrically driven)
Arc tube (lamp):	Medium pressure
Arc tube enclosure:	Pure quartz (F200)
Number of arc tubes (lamps):	1 (D PH 0060-0300), 4 (D PH 0400 - 0550), 6 (D PH 0900), 8 (D PH 0950 - 0970)
Expected lamp life:	8000 hrs, 4000 hrs D PH 0240 and 0300
Temperature sensor:	Yes
UV monitor:	Wet UV monitor (if above minimum T10)
Working fluid temperature:	1˚C to 60˚C
Hydrostatically pressure tested:	Yes to PED requirements EN 13445
Chamber mounting:	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 material: Stainless steel 316
- Operation and Maintenance manual and printed Installation and Commissioning manual in Chinese, English, French, German and Spanish
- Flange options: ANSI 150, JIS, Table 'E'
- Lead length: 20 m, 30 m or 50 m cabinet to chamber
- Welder Document Pack for chamber construction
- Bleed valve: BSPT or NPT if ANSI flange
- Skid mounting (not ship board or earthquake zone)
- Operating pressure: 10 bar

OPTIONS (CONTINUED)

- Power adjustment: 4 level power switching
- Air vent connection: BSPT blanked off or NPT if ANSI flange
- Stainless steel cabinet with air to air heat exchangers IP 56, NEMA 4X, relative humidity <95% non condensing. If fitted no UL listing. See sales drawings for sizes.
- Aggressive water package: For 400 ppm to 20000 ppm chloride water
- UVShield™: Power cut-out for lamp access (except D PH 0400 - 0970)
- Water leak detection: Detects water leaks from quartz sleeve (except D PH 0400 - 0970)
- Halogen free cables
- Arc tube enclosure: Doped quartz F240 (reduces performance)

CABINET (CONTROLLER PHOTON)

Material:	Polyester coated carbon steel
Degree of protection:	IP54 NEMA 12
Supply voltages:	D PH 0070-0083 95 V to 260 V (+/- 10%) D PH 0100-0300 190 V to 480 V (+/- 10%) D PH 0350-0950 380 V to 480 V (+/- 10%) 50/60 Hz
Operating temperature range:	5˚C to 40˚C
Relative humidity:	<85% non-condensing
Cooling fans:	Yes
Interconnecting cable:	10 m cabinet to chamber

CUSTOMER OUTPUTS

4-20 mA passive or active output:	UV intensity %, or UV dose (if power stepping option)
VFC outputs:	System warning, lamp ready, low UV, common trip, remote reset, ELCB or water leak, system available, local or remote mode

CUSTOMER INPUTS

4-20 mA passive or active output:	Flow meter
VFC inputs:	Remote stop/start and remote reset

CUSTOMER COMMUNICATIONS PORT

None

APPROVALS

CE marked, UL listed E149108

RASLine D PH

Also available in our Aquaculture product range...

RASLINE D EO

Energy Optimised general treatment suitable for clear waters

RASLINE PQ IL

3rd party NVI validated systems for critical treatment applications.

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