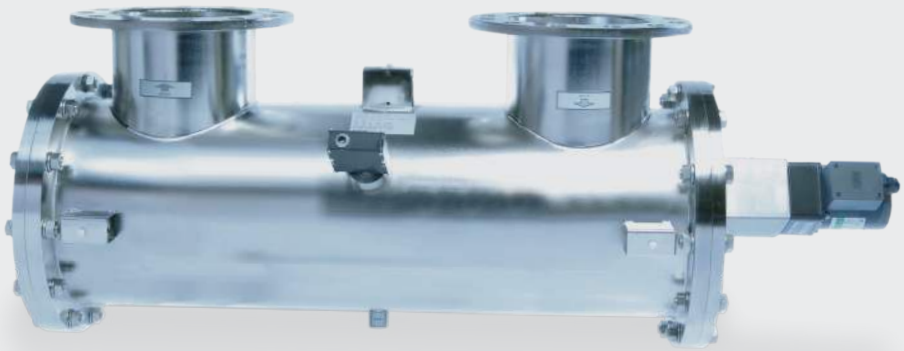
formerly Aquionics, Berson, Hanovia and Orca GmbH

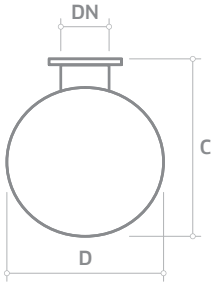


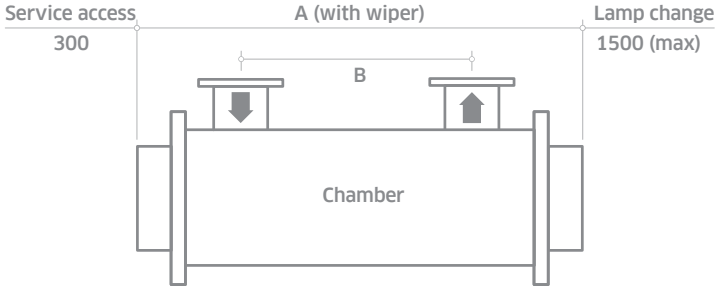
TOCLine DT PH

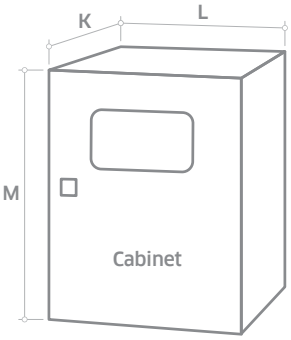
OPTIMIZED UV TREATMENT FOR MICROELECTRONICS

Total Organic Carbon (TOC) is found in all water supplies as naturally occurring organic matter. In order to produce ultrapure water for use in microelectronics applications, TOC in water must be broken down and reduced using UV treatment. High purity quartz materials that are partly transparent to short UV wavelengths and specific designs are needed for UV devices intended for TOC reduction. By dissolving molecular bonds and generating aggressive hydroxyl radicals from water molecules that break down organic substances, low molecular weight organics are broken down by an unique 185 nm synthetic UV light and quartz sleeve. In large volume water purification processes, our medium pressure UV systems decrease the amount of conventional lamps by up to 95% while lowering running and maintenance expenses by 50% or more.

Application
Optimised UV for
Total Organic Carbon







MODEL NUMBER	MAX POWER (KW)	LAMP (QTY)	CHAMBER SIZE (MM)								APPROX WEIGHT (KG)	
			A	B	C	D	DN	K*	L	M**	Chamber (Empty)	Control Cabinet
TOCLine DT PH 150D1/3	4.4	1	1090	710	319	240	80	330	750	850	50	85
TOCLine DT PH 200D1/4	4.4	1	1090	710	420	290	100	330	750	850	65	85
TOCLine DT PH 200F2/4	8.3	2	1090	710	420	290	100	330	900	1100	65	165
TOCLine DT PH 200G3/3	12.5	3	1090	710	420	290	80	330	1100	1600	65	285
TOCLine DT PH 200G4/4	16.5	4	1090	710	420	290	100	330	1100	1600	65	285
TOCLine DT PH 320D1/6	4.4	1	1090	660	505	410	150	330	750	850	140	85
TOCLine DT PH 320F2/4	8.3	2	1090	710	505	410	100	330	900	1100	140	165
TOCLine DT PH 320G4/6	16.5	4	1090	660	505	410	150	330	1100	1600	140	285
TOCLine DT PH 320K6/8***	25.2	6	1220	610	505	410	200	330	900	1100	140	165
								330	1100	1600		285
TOCLine DT PH 320L8/8***	33	8	1220	610	505	410	200	330	1100	1600	140	165
								330	1100	1600		285

* 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).
*** K6 and L8 power supply units are housed in two interconnected cabinets that may either be mounted side-by-side along a wall or back to back on an optional stainless steel skid.
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. Our distributor or our account manager can advise on correct sizing and specification requirements.

CHAMBER	
Material:	Stainless Steel 316L / 1.4404 pipe
Internal Finish:	< 0.6 µm Ra, welds polished out, electropolished and passivated
External finish:	Sateen polish (120 grit) electropolished and passivated
Process (mating) connections:	Flange EN 1092-1 PN
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
Arc tube (lamp):	Super TOC, medium pressure
Arc tube enclosure:	Synthetic quartz sleeves (F180)
Number of arc tubes (lamps)	1 (150D1/3, 200D1/4, 320D1/6), 2 (200F2/4, 320F2/4), 3 (200G3/3), 4 (200G4/4, 320G4/6), 6 (320K6/8), 8 (320L8/8)
Expected lamp life:	4,000 hours
Temperature sensor:	Yes
UV monitor:	Wet UV Monitor
Working fluid temperature:	1˚C to 80˚C
Maximum CIP temperature:	95˚C with cabinet electrically isolated
Hydrostatically pressure tested:	Yes to PED requirements EN 13445
Chamber mounting:	Horizontal only
Operating pressure:	6 bar
Seals:	EPDM, ADI free, EC1935/2004, FDA21 CFR177.2600 approved

OPTIONS
Document Support Pack
Cabinet material: Stainless Steel 316 with fans (IP54)
Operation and Maintenance manual and printed installation and Commissioning manual in Chinese, English, French, German and Spanish
Flange options: ANSI 150, JIS, Table 'E' and tri-clamp
Chamber internal finish: <0.38 µm welds polished out, electropolished and passivated
Lead length: 20 m, 30 m or 50 m cabinet to chamber
Welder Document Pack for chamber construction

OPTIONS (CONTINUED)
Maximum CIP temperature: 130˚C (panel switched off)
Bleed valve: BSP or NPT if ANSI flange
Skid mounting (not shipboard or earthquake zone)
Operation pressure: 10 bar
Air vent connection: BSP or NPT if ANSI flange
Drain and air vent tri-clamp if inlet and outlet tri-clamp connection
Stainless steel cabinet with air to air heat exchangers IP56, NEMA 4X, relative humidity <95%, non-condensing. If fitted, no UL listing. Sales drawings for size on request
UVdisconnect: Power cut-out for lamps access for DT PH 150D1/3, DT PH 200 D1/4 and DT PH 320D1/6
Water lead detection: Detects water leaks from quartz sleeve for DT PH 150D1/3, DT PH 200D1/4 and DT PH 320D1/6

CABINET (CONTROLLER ELECTRON PHOTON)	
Material:	Epoxy coated carbon steel
Interconnecting cable lengths:	10m
IP Rating:	IP54 / NEMA 12
Power Supply:	150D1/3 200D1/4, 320D1/6, 200F2/4, 320F2/4: 190V to 480V (+/-10%) 200G3/3, 200G4/4, 320G4/6, 320K6/8, 320L8/8: 380V to 480V (+/-10%) 50/60Hz
Operation Temp:	5˚C to 40˚C
Humidity	<85% non-condensing
Cooling fans:	Yes

CUSTOMER OUTPUTS AND INPUTS	
4-20 mA passive output:	UV dose or intensity %
VFC outputs:	System warning, lamp ready, low UV intensity, common trip, remote reset, ELCB or water leak, system available, local or remote mode
4-20 mA passive or active input:	Flow meter
VFC inputs:	Remote stop/start and remote reset

APPROVALS
CE marked, UL Listed E149108

Attention: No TOC guarantee can be provided with this equipment. Please see our 'TOC Reduction Performance Statement' which applies to all TOC quotes.

TOCLine DT PH

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germany@nuvonicuv.com

Mexico
+1 980 256 5700
americas@nuvonicuv.com

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

USA
+1 980 256 5700
americas@nuvonicuv.com

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