TOCLine ECO

Also available in our ECO product range...

PHARMALINE ECO

Reduce the bio-burden, protect against bio-fouling, lead to fewer CIP/SIP

PURELINE ECO

Utility and service water treatment

Canada
+1 980 256 5700
americas@nuvoniuvc.com

China
+86 216 167 9599
apac@nuvonicuv.com

Germany
+44 175 351 5300
emea@nuvonicuv.com

Malaysia
+60 16 440 8834
sea@nuvonicuv.com

Mexico
+1 980 256 5700
americas@nuvonicuv.com

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

USA
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americas@nuvonicuv.com

NUVONIC

A Halma company

formerly Aquionics, Berson, Hanovia and Orca GmbH

Nuvonic 910061-0001-10-EN

nuvonicuv.com

FM 29365

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formerly Aquionics, Berson, Hanovia and Orca GmbH

TOCLine ECO

OPTIMIZED UV TREATMENT FOR MICROELECTRONICS

TOC: With the use of a special 185 nm lamp and quartz sleeve, TOC reduction is achieved primarily via an oxidation process where generated free hydroxyl radicals disassociate molecular bonds of organic compounds thus resulting in their removal, as well as direct photolysis of organic molecules by photon absorption.

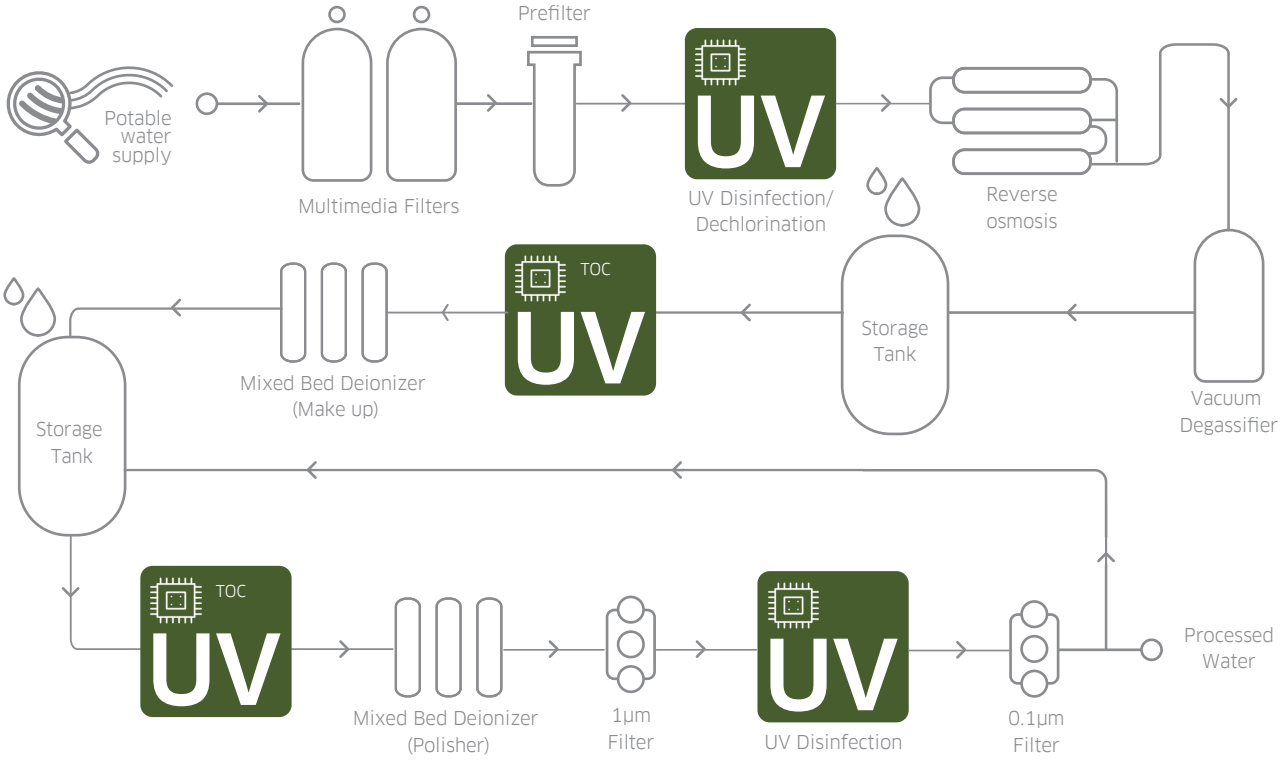
Efficiency: Reduce your carbon footprint significantly while maintaining the highest quality standards in your operations.

Compact Brilliance: ECO fits where others can't, delivering uncompromised results in limited space.

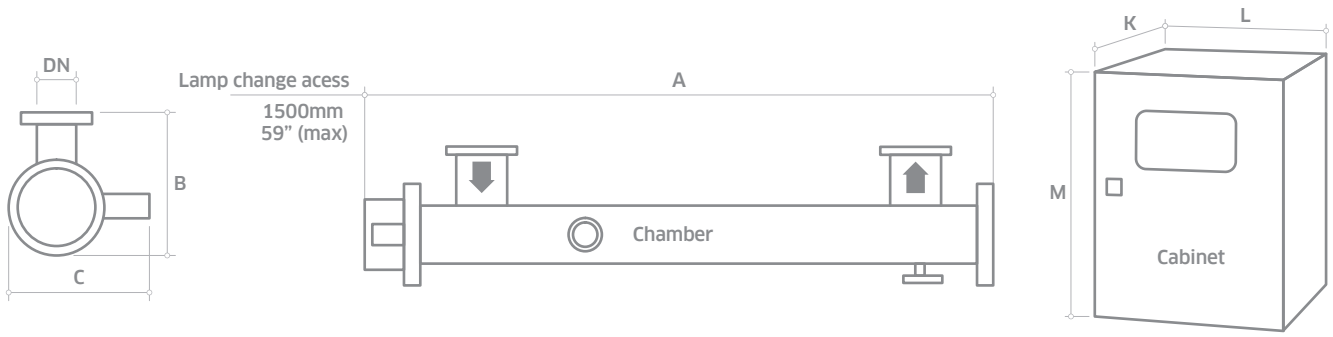
Optimized Performance: ECO is optimized for peak performance, providing consistently reliable water treatment solutions.

Application
Optimized UV for Total Organic Carbon

POTENTIAL LOCATIONS OF THE TOCLINE ECO



KEY FEATURES	WHAT IT GIVES YOU	BENEFITS FOR YOU
INTELLIGENCE		
UV intensity sensor measuring active wavelengths	Continuous verification of performance with in-built low intensity alarm	Easy to monitor and log system performance
OPTIMIZATION		
Energy efficient UV lamps	Less power requirements on-site	More savings through lower energy bills
Designed for the semi-conductor manufacture market	FDA-approved materials used for all wetted parts	Industry compliant materials
	Optional chamber <0.38 µm internal finish	Sanitary design
INTEGRATION		
Compact design	Can be fitted to skids	Easy integration
	Can be retrofitted to existing process	



MODEL NUMBER	MAX POWER (W)	LAMP (QTY)	I/O (TYPE)	CHAMBER SIZE (MM)				CABINET			WEIGHT (KG)	
				A	B	C	DN	K	L	M	Chamber	Cabinet
TOCLine ECO T2	380	1	Flange	1785	230	275	80	180	470	535	22.6	20.5
TOCLine ECO T4	750	2	Flange	1785	335	315	80	210	490	600	42	27.6
TOCLine ECO T6	1080	3	Flange	1785	335	315	80	210	490	600	41	29.1
TOCLine ECO T8	1420	4	Flange	1785	335	315	80	210	500	700	41.4	35.5
TOCLine ECO T10	1750	5	Flange	1785	335	315	80	210	500	700	42	36.9
TOCLine ECO T12	2100	6	Flange	1785	335	315	80	210	510	800	43.5	44.5
TOCLine ECO T14	2430	7	Flange	1785	455	355	100	210	510	800	66.4	45.9

* 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).
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.

UV CHAMBER	
Material:	StSt 316L / 1.4404
Process (Mating) connection:	PN10 to EN1092-1
End plate:	Removable plate - Tri-Clamp
Drain Port:	Tri-Clamp 1" BS4825
Degree of protection:	IP54 equivalent to NEMA 12
Internal Finish:	< 0.5 µm Ra (Welds ground out)
Lamp Type:	Low Pressure Amalgam
Expected Lamp life:	9000 hours
UV Sensor:	Dry sensor
Temperature Sensor:	Yes
Seals:	Viton
Working fluid temperature:	0-40°C
Maximum CIP temperature:	95°C with cabinet electrically isolated
Operating Pressure	10 Bar

OPTIONS
Interconnecting cable lengths: 5 m
Chamber internal finish: < 0.38 µm
Document Support Pack
ANSI B 16.5 Class 150 process (mating) connection
Carbon Steel Cabinet material

APPROVALS
CE marked, UL

CABINET (UV CONTROLLER)	
Material:	Stainless steel 304
Controller:	UV Controller
HMI:	7" Touch screen
Interconnecting cable lengths:	3 m
IP rating:	IP54 / NEMA 12
Power supply:	220 V ± 10%, 50/60 Hz, single phase, L+N+G
Operating temperature range:	5-40°C
Humidity:	< 90% no condense cabinet fan
Control & Display:	Stepless power adjustment 50-100%
	Fixed dose running
	UV dose
	Water temperature
	Lamp running hours
	Flow rate (m^3/h or GPM)
	All alarms and warnings
Alarm & Warning:	Low UV dose
	Lamp end pre-warning (time adjustable)
	Lamp fault alarm
	Chamber over temperature alarm
	UV sensor fault alarm
	Temperature sensor fault alarm
	Warning for lamp and quartz resetting
Input:	Flow 4-20 mA
	T_{10} 4-20 mA
	Remote On/Off
Output:	UV dose 4-20 mA
	Any system alarm VFC
	Any system warning VFC
	Low UV dose alarm VFC
	Lamp fault alarm VFC
	Lamp warming VFC

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

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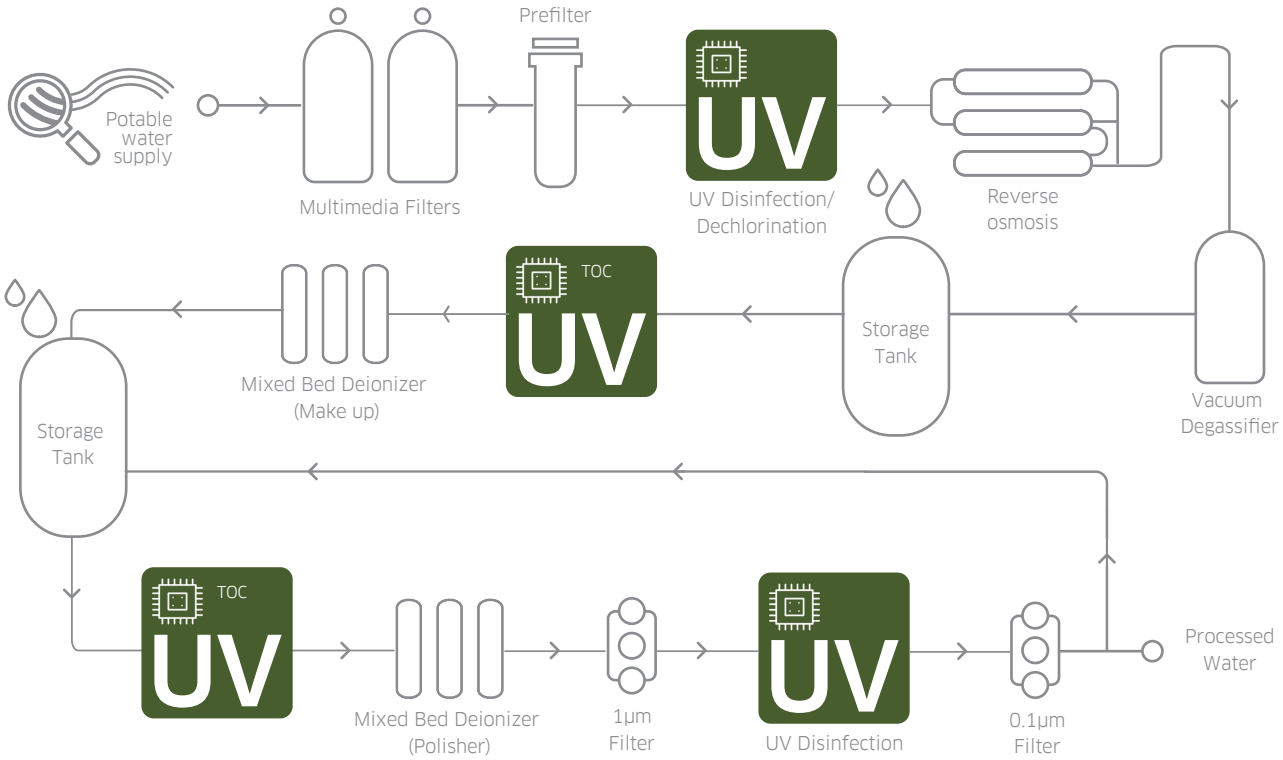
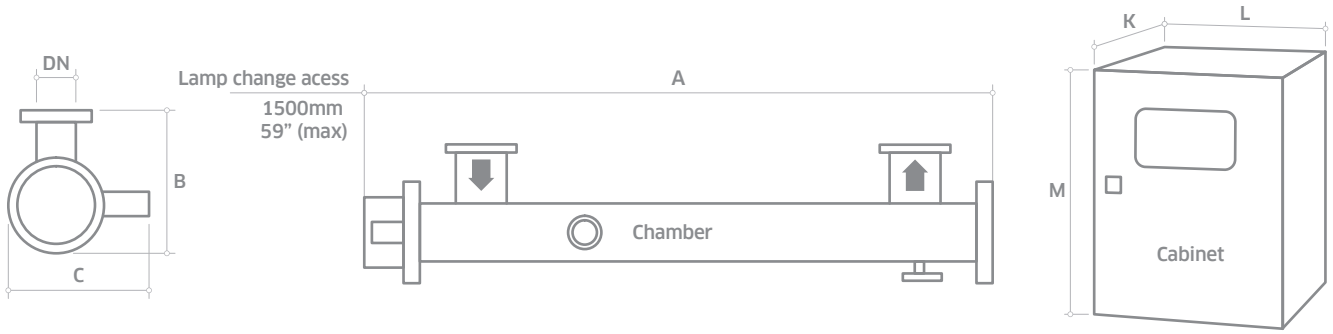


KEY FEATURES	WHAT IT GIVES YOU	BENEFITS FOR YOU
INTELLIGENCE		
UV intensity sensor measuring active wavelengths	Continuous verification of performance with in-built low intensity alarm	Easy to monitor and log system performance
OPTIMIZATION		
Energy efficient UV lamps	Less power requirements on-site	More savings through lower energy bills
Designed for the semi-conductor manufacture market	FDA-approved materials used for all wetted parts	Industry compliant materials
	Optional <0.38 µm chamber internal finish	Sanitary design
INTEGRATION		
Compact design	Can be fitted to skids	Easy integration
	Can be retrofitted to existing process	



MODEL NUMBER	MAX POWER (W)	LAMP (QTY)	I/O (TYPE)	CHAMBER SIZE (INCHES)				CABINET			WEIGHT (LB)	
				A	B	C	DN	K	L	M	Chamber	Cabinet
TOCLine ECO T2	380	1	Flange	70.3	9.1	10.8	3	7.1	18.5	21.2	49.8	45.2
TOCLine ECO T4	750	2	Flange	70.3	13.2	12.4	3	8.3	19.3	23.6	92.6	60.8
TOCLine ECO T6	1080	3	Flange	70.3	13.2	12.4	3	8.3	19.3	23.6	90.4	64.2
TOCLine ECO T8	1420	4	Flange	70.3	13.2	12.4	3	8.3	19.7	27.6	91.3	78.3
TOCLine ECO T10	1750	5	Flange	70.3	13.2	12.4	3	8.3	19.7	27.6	92.6	81.4
TOCLine ECO T12	2100	6	Flange	70.3	13.2	12.4	3	8.3	20.1	31.5	95.9	98.1
TOCLine ECO T14	2430	7	Flange	70.3	17.9	14.0	4	8.3	20.1	31.5	146.4	101.2

* Allow dimension L in front of cabinet for door opening and panel access.
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UV CHAMBER	
Material:	StSt 316L / 1.4404
Process (Mating) connection:	ANSI B 16.5 Class 150
End plate:	Removable plate - Tri-Clamp
Drain Port:	Tri-Clamp 1" BS4825
Degree of protection:	IP54 equivalent to NEMA 12
Internal Finish:	< 0.5 µm Ra (Welds ground out)
Lamp Type:	Low Pressure Amalgam
Expected Lamp life:	9000 hours
UV Sensor:	Dry sensor
Temperature Sensor:	Yes
Seals:	Viton
Working fluid temperature:	32-104°F
Maximum CIP temperature:	203°F with cabinet electrically isolated
Operating pressure:	145 PSI

OPTIONS
Interconnecting cable lengths: 16.4 ft
Chamber internal finish: < 0.38 µm
Document Support Pack
PN10 to EN1092-1 process (mating) connection
Carbon Steel Cabinet material

APPROVALS
CE marked, UL

CABINET (UV CONTROLLER)	
Material:	Stainless steel 304
Controller:	UV Controller
HMI:	7" Touch screen
Interconnecting cable lengths:	9.8 ft
IP rating:	IP54 / NEMA 12
Power supply:	220 V ± 10%, 50/60 Hz, single phase, L+N+G
Operating temperature range:	41-104°F
Humidity:	< 90% no condense cabinet fan
Control & Display:	Stepless power adjustment 50-100%
	Fixed dose running
	UV dose
	Water temperature
	Lamp running hours
	Flow rate (m^3/h or GPM)
	All alarms and warnings
Alarm & Warning:	Low UV dose
	Lamp end pre-warning (time adjustable)
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