

LENNTECH
WATER TREATMENT SOLUTIONS

ozonia[®] membrel[®]

electrolytic ozone generators



The most effective way to disinfect ultrapure water loops in industrial and pharmaceutical applications.

**pure & ultrapure water
purified & highly-purified water
water for injection**

applications

- ▶ pharmaceutical & cosmetics
- ▶ bottling water plants
- ▶ cooling towers
- ▶ aquaculture

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ready for the resource revolution



ozone technology: ozonia® membrel® MkIV



main features

- ▶ electrolytic ozone production
- ▶ easily upgradeable from 3g O₃/h to 9g O₃/h
- ▶ user-friendly with individual cell controls
- ▶ remote control capabilities
- ▶ no ionic contamination
- ▶ easily installed, maintaining system integrity

The **ozonia® membrel® MkIV** is the latest generation of electrolytic ozone generators which uses solid polymer electrolyte and state-of-the-art electronics for ozone production. The **ozonia® membrel® MkIV** electrolytic process is a **unique technology which produces ozone from water** instead of gaseous air or oxygen.

how it works

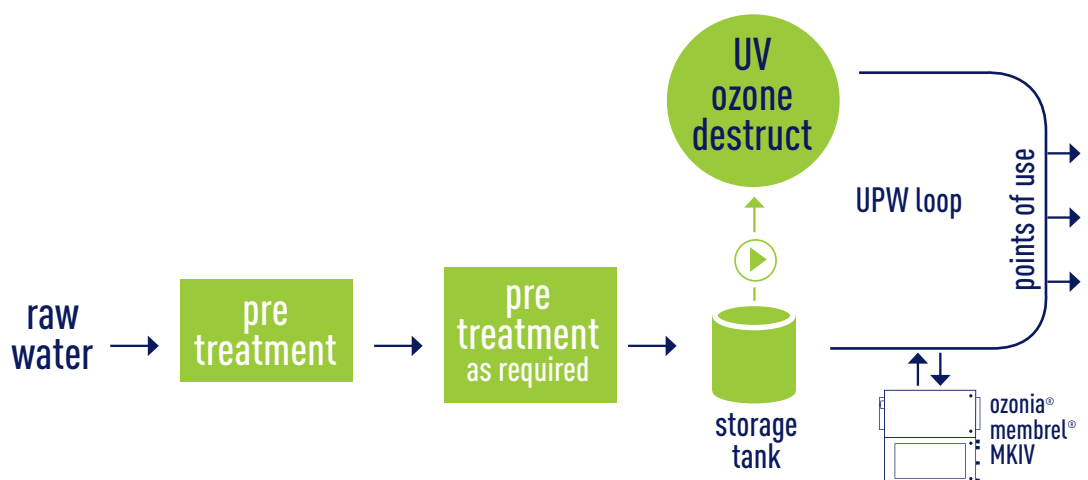
The feed water, taken from the main UPW loop, enters the anode chamber of the cell where it is dissociated into its two elements at the contact surface between the anode and the electrochemically stable membrane.

The hydrogen proton travels through the membrane and is reduced to hydrogen gas on the cathode side before being vented to atmosphere. On the anode

side a portion of the liberated oxygen is converted into ozone which is quickly absorbed by the feed water. The water/oxygen/ozone mixture leaving the cell is reintroduced to the main body of water circulating in the loop.

The installation of an **ozonia® membrel® MkIV** is an effective way of sanitizing a pure water loop. Because the ozone is produced from the water being treated there are no contaminants. The use of chemicals or additional treatment steps is not necessary.

By dosing an ozone level of 30 to 100 ppb the colony forming unit count and formation of bio-film is kept to a minimum. Should ozone be undesirable in the process, an ultraviolet irradiation ozone destruct unit is installed prior to the first point of use.



model	ozone production	feedwater			electrical rating (kW)
	g/h (approx.)	nominal flow rates (l/h)	maximum pressure (barg)	conductivity (µS/cm)	
ozonia® membrel® MkIV/1	3	100	< 6	< 20	0.46
ozonia® membrel® MkIV/2	6	200	< 6	< 20	0.86
ozonia® membrel® MkIV/3	9	300	< 6	< 20	1.27

technical features

- ▶ **power supply:** 1 x 230 VAC +10%/-20%, 50/60 Hz
- ▶ **regulation range:** 8 to 100%
- ▶ **ambient temperature:** +5 to 40°C / +41 to 104°F
- ▶ **design altitude:** < 1,000 m.a.s.l. / 3,280 ft.a.s.l.
- ▶ **humidity:** RH < 65% (yearly average)
- ▶ **protection class:** IP 54, Nema 12
- ▶ **conformity:** EN, IEC, ISO, CE

materials

- ▶ **enclosure:** stainless steel ANSI 304
- ▶ **wetted surfaces:** ANSI 316L SS, titanium, PTFE, PVDF, Viton, glass
- ▶ **bulkhead connections:** stainless steel ANSI 316L SS

complementary equipment

- ▶ **ultraviolet ozone destruct unit**
- ▶ **residual ozone analyser**
- ▶ **vent ozone destructor**
- ▶ **tri-clamp inserts for SERTO connections**

remote control and alarms

- ▶ **ozone production ON/OFF**
- ▶ **alarm acknowledgement**
- ▶ **set-value (4 to 20mA)**
- ▶ **collective alarm**

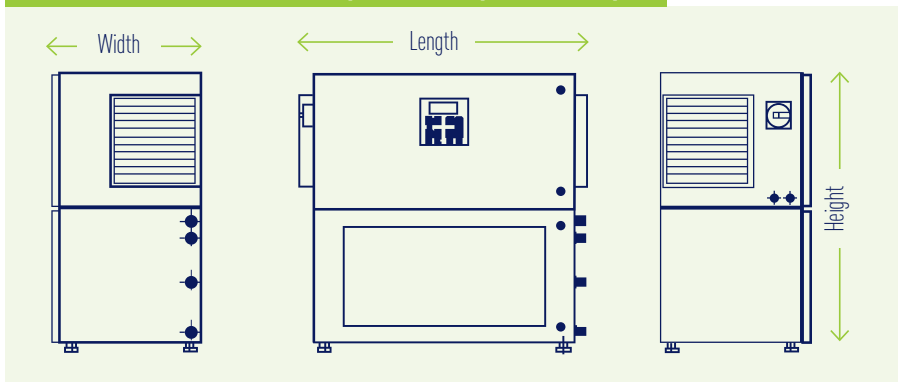
connection data

- ▶ **mechanical:** bulkhead fitting SERTO for pipelines 10 mm (0.39 inch) I/D, 12 mm (0.47 inch) O/D.
- ▶ **electrical:**
 - electrical connection in single phase (1 X 230V mono)
 - 1 power cable

system production

- ▶ **ozonia® membrel® MkIV/1 for 3g O₃/h**
- ▶ **ozonia® membrel® MkIV/2 for 6g O₃/h**
- ▶ **ozonia® membrel® MkIV/3 for 9g O₃/h**

ozonia® membrel® MkIV/1 - MkIV/2 - MkIV/3



model	L x H x W		weight	
	inch	mm	lb	kg
ozonia® membrel® MkIV/1	30.31 X 28.66 X 15.74	770 x 728 x 400	123.5	56
ozonia® membrel® MkIV/2	30.31 X 28.66 X 15.74	770 x 728 x 400	134.5	61
ozonia® membrel® MkIV/3	30.31 X 28.66 X 15.74	770 x 728 x 400	145.5	66

SUEZ's **ozonia**® ozone technology portfolio includes products from the laboratory scale to the largest ozone systems ever built. Suez uses our extensive ozone technology experience to provide the industry's most reliable and robust products.

Our unique ability to deliver the most reliable and robust systems is why thousands of customers around the world have chosen **ozonia**® ozone systems.

We have been the ozone industry pioneer for over 25 years. Trust SUEZ to deliver the highest quality ozone solutions to meet your treatment challenges.

7
product ranges
certified to
international
standards

over
10,000
installations

over
25
years of
experience



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