Introducing the future of in-line fluid disinfection systems

ASM-R

Turn-key system reactors

Featuring ultrasound, ultraviolet and ozone disinfection processes in one, compact and cost-effective unit.

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ASM-R Commercial / Industrial in-line fluid disinfection reactors

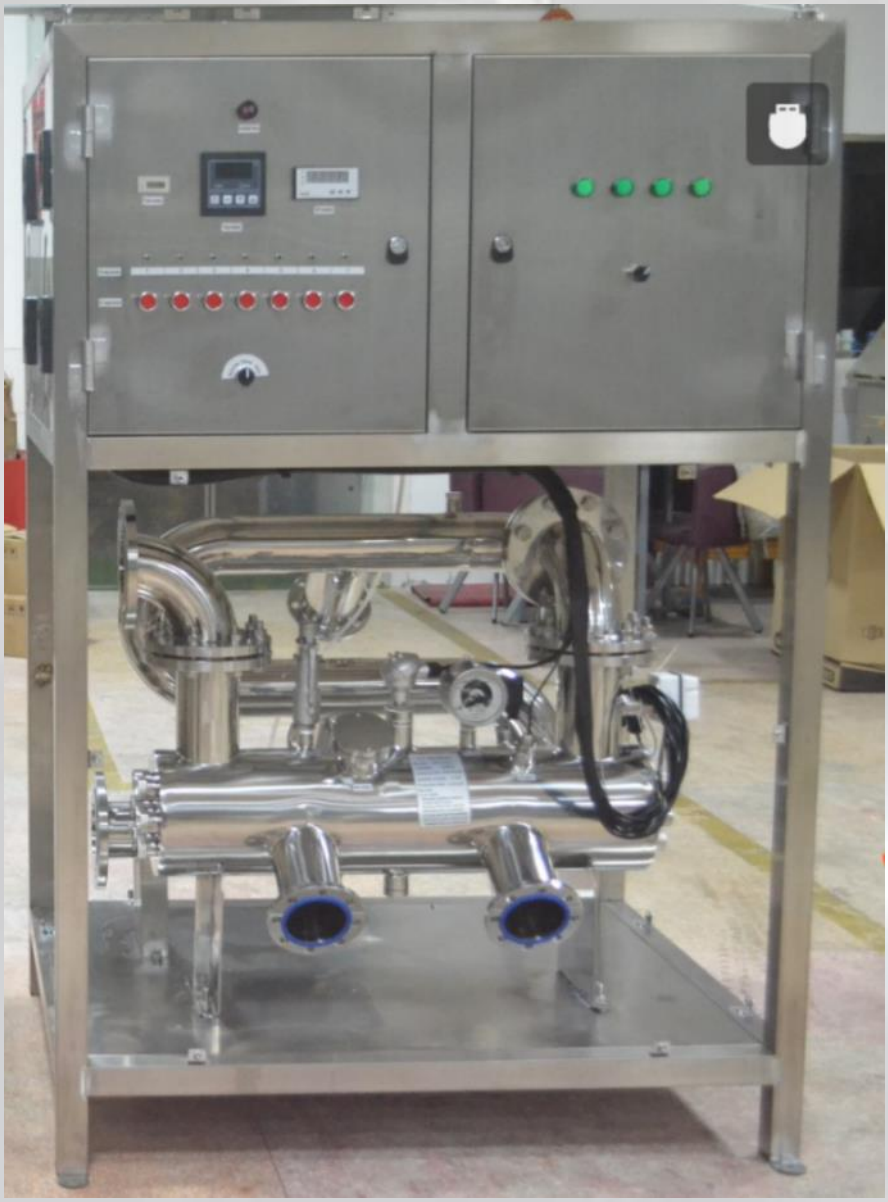
ASM-R are the next generation technology for the inline disinfection of water for applications such as agriculture, horticulture, food processing plants, swimming pools, water cooling towers….anywhere clean, pathogen free water is required without the use of chemicals.

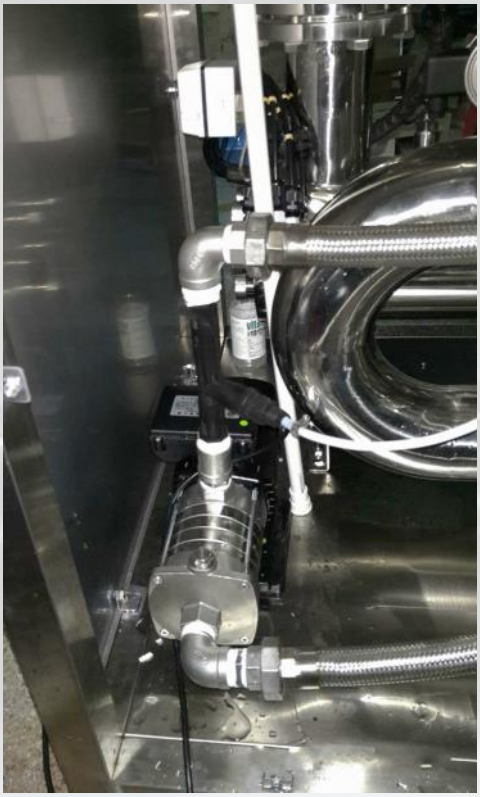
In a world first, the ASM-R water treatment reactors use a combination of ultraviolet (“UV”) + ultrasonic (“US”) + ozone (“O_3”) technology to very successfully and cost effectively remove pathogen micro-organisms from water.

While the most common application for this technology is water disinfection it is also used for Total Organic Carbon ("TOC") reduction, ozone destruction and chlorine/ chloramines destruction.

The combination of these three processes has been found to be the most efficient, safe and environmentally friendly way to disinfect water and other fluids in a continuous manner.

ASM-R may also be used without ozone where the use of ozone is not desired.





Features:

1. Self-cleaning (by ultrasonic cavitation, subject to flow-rate and water quality) SAE 316 stainless steel reactor chamber with flow sensor, sample valve, inspection port and testing nipples. Flowrate adjustable.

2. Mounted in semi-enclosed SAE 304 stainless steel frame complete with 2 door ventilated stainless steel control cabinet, ozone generator with air dryers, mixing pump, 1 x VAC Digital Smart Logic Controllers with built-in cooling fans per transducer for ultrasound, SAE 316 stainless steel S-Bent ozone chamber with built-in cavitation transducers, ozone / oxygen injection pump, remote control input, DC power supply, timer, start relay, 3-stage switch, power on/off/auto with status LED, UV tube sensors and built-in cooling fans. Status indicators include LCD panel/readout of UV status and LED status lights/displays for US, PCB, temperature, operating status. Safety features include 1 x temperature sensor, safety and overload switches, RCDs, flow sensor, glass fuses ,pressure release valves

3. The UV system utilises Philips UV lamps in the reactor chamber. There are generic and widely available and not expensive, proprietary lamps.

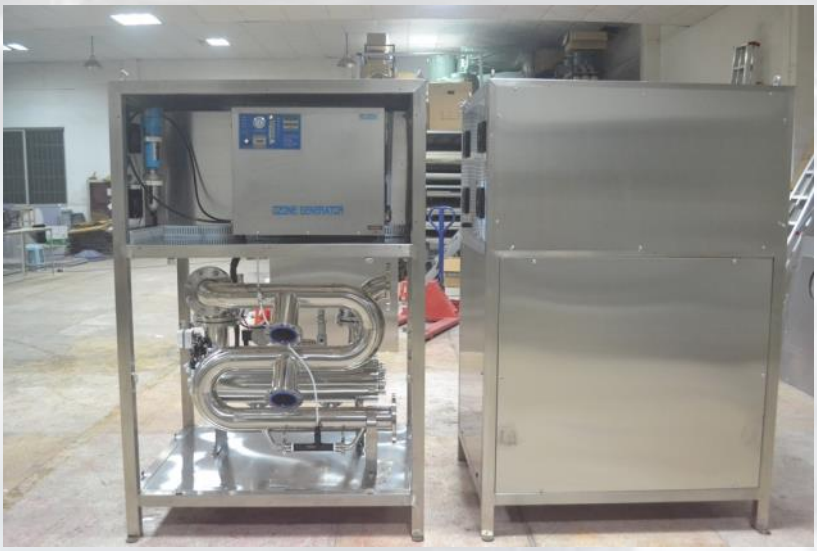
4. All ASM-R reactors are supplied with 254nm germicidal lamps as standard, however customers have the option to change-out any number of the lamps for 185nm TOC lamps if required. For all models except the ASM-R500 the lamp types are interchangeable in the reactor, however the 500W lamps used in the ASM-R500 cannot be interchanged between 254nm and 185nm without also changing the transformer. Please see the 'options' price list for the cost of changing out the lamps for each model.

5. Each ASM-R reactor includes an ASM-RO SAE 316 stainless steel in-line ozone injection chamber with built-in cavitation transducers and associated cabinet-mounted controllers.

6. All ASM-R reactors include 1 x gas-liquid mixing injection pump with venturi.

7. ASM-R40 reactors include built-in servo-controlled voltage regulator transformers to protect the systems from 'dirty' power.

8. For optimum results ASM strongly recommends pre-filtering with e.g. a sand filter to remove particulates before the water is introduced to the ASM-R reactor.



ASM-R Turnkey System Model:	ASM-R40	ASM-R160	ASM-R300	ASM-R500
Ultraviolet System:				
Function (standard, see options below)	Biocidal			
Maximum flow rate (32MJ/cm2 based on 85%UVT) m3/hr	40	160	300	500
Maximum flow rate (60MJ/cm2 based on 85%UVT) m3/hr	30	100	200	350
Ultraviolet Lamps	254nm 7 x 75W (525W total)	254nm 14 x 145W (2,030W total)	254nm 14 x 320W (4,480W total)	254nm 14 x 500W (7,000W total)
Expected lamp Life (hrs)*	9000 - 13,000			
UV LCD control	Yes			
Ultrasonic System:				
Ultrasonic Transducers	4 x 300W (2 in main reactor chamber, 2 in ozone S-chamber)	14 x 300W (10 in main reactor chamber, 4 in ozone S-chamber)		
Transducer Housing	SAE 316 stainless steel			
Ozone System: **Ozone Generator**	Built-in ASM-O20K ozone reactor, 20g/h with built-in air compressor and dryer			
Ozone / ultrasonic mixing S-chamber	ASM-R40; with 2 x 300W ultrasonic cavitation transducers	ASM-R 160-300-500; with 4 x 300W ultrasonic cavitation transducers		
Ozone Control	Built-in			
Manual Valve	Optional			
Electrical, Plumbing & Controls: **Built-in voltage regulator transformer**	Servo-controlled, 5Kva, 3000W	Optional		
Smoke detector	Built-in			
Pressure release mechanical safety valve	Built-in			
Digital flow meter	Optional			
Electrical Supply Requirement	Single phase, 220-240VAC 50/60Hz +/- 8%, 5kVA	3-phase 380/415V R-160: 8 kVA R300: 10 kVA R500: 13 kVa		
Cooling System for electrical cabinet	CE marked, RoHS compliant, integrated thermoelectric air-cooler; suitable for NEMA 4 rating enclosure. 48v.			
Plumbing Inlet / Outlet	DN100 PN1.0Mpa	DN 150 PN1.0Mpa		
Physical Dimensions: **Full System (mm) L x W x H**	1200 x 1000 x 1500	1800 x 1200 x 1500		
Reactor Chamber (mm)	945 x 200 Ø	1600 x 350 Ø		
Ozone / ultrasonic mixing chamber (mm)	S-Chamber 100 Ø	S-Chamber 150 Ø		
System weight, net (kg)	268	390	430	590

1. Ultrasonic transducers (300W) are mounted in the reactor chamber walls to produce high cavitation inside the chamber which continuously cleans the quartz sleeves and helps kill algae and pathogens in the water; augmenting the sterilisation process.
2. Ultrasonic transducers (300W each) are mounted in the ozone chamber walls to assist with the mixing of the ozone into the water and augment the sterilisation process.
3. The ASM-R40 systems are available for either 110VAC +/-8% or 220VAC +/-8%. It is recommended that a suitable power conditioner be used in regions with unstable/strongly fluctuating power.
4. All other ASM-R systems require 3-phase 380/415V regulated power supply.
5. The quoted UV intensities are subject to flow rate and water quality.
6. *Expected lamp life is based on continuous running under normal conditions. Excessive turning on/off of the system can significantly reduce lamp life. The quoted lamp life is for 254nm biocidal lamps; 185nm TOC lamps have an expected life of >13,000 hours.
7. For optimum results ASM strongly recommends pre-filtering with e.g. a sand filter to remove particulates before the water is introduced to the ASM-R reactor.
8. Operating temperature range: Water: 5°C ~ 50°C , ambient air :2°C ~ 38°C