



Asm-R40 Reactor Turn-Key series

The combination of an Ultraviolet-ozone and Ultrasonic system results in a very reliable cost effective process that is also easy to manage for various water production requires the reduction of bacteria and total oxidisable carbons (TOC's).



- Inactive bacteria, pathogen, virus in the water supply by removing and killing micro-organism.
- Cost effective and low operating cost and savings in consumables.
- No more cleaning of uv tubes and chamber.
- Uniform UV-US –OZONE dose through-out the entire water flow chamber.
- Vertical or Horizontal mounting orientation
- UV intensity controller, alarm, lamp status operating time, temperature controller and more.
- All manufactured from polished stainless steel 316

Main applications:

- ◆ Tank & Drinking water supplies
- ◆ Industrial process water for food, produce and beverages

ASM-R40 System is a proven method which destroys up to 99.9% of bacteria and viruses without leaving residual chemicals and is an excellent choice for eliminating biological contamination of most water supplies.

ASM-R-40 Ultraviolet & Ultrasonic , Ozone for TOC reduction and advance oxidation

The primary UV/Ozone ultrasonic chemical reaction is an oxidation process that begins when high-energy 254 nm UV dissociates water molecules, thereby creating hydroxyls (free OH- radicals).

The hydroxyls created by UV –OZONE under cavitation are highly reactive and readily combine with other molecules, such as the hydrocarbon molecules that make-up TOC's. When hydroxyls combine with the TOC hydrocarbons they form water and carbon dioxide molecules; TOC's are destroyed and the oxidation is complete.

Ultraviolet light disinfects by disrupting the DNA or RNA structures of micro organisms. The disruption prevents micro organisms from replicating, thereby rendering them inactive and unable to cause infection. The primary mechanism of inactivation by UV is the creation of Pyrimidine Dimers which are bonds formed between adjacent pairs of thymine or cytosine pyrimidine's on the same DNA or RNA strand



ASM-R40 Reactor series

Technical information



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 airdryers, 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 unit, 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 the use of a sand-filter or similar to remove particulates before the water enters the reactor since particulates in the water may significantly decrease the efficiency of disinfection.

Notes for ASM-R series:

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-P40 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

Model-specific features are listed below:



Aqua Sonic Management International limited

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