

Criteria	AERSAFE technology	HEPA	UV applications on air	Ozone steriliser
<b>Filtration efficiency</b>	> 90% does not decrease over time.	> 90 filtration efficiency increases over time due to clogging, making however, more difficult for air to pass through	None, UV systems are not a filtration technology. Ineffective on pollen and allergens.	None, Ozone systems are not a filtration technology
<b>Microbial inhibition</b>	The copper on the collection plates inhibits viruses and bacteria 6 hours after direct contact. Discharges have an additional bactericidal action.	None. On the contrary, over time they become a breeding ground for pathogen colonies (bacterial bombs).	Direct action on the DNA/RNA of viruses and bacteria. Difficult to prove efficiency because dependent on air speed and irradiation distance and power. Produces potentially dangerous by-products released back into the environment.	Highly toxic to viruses and bacteria, but also to plants, animals and people. It has negative effects on surfaces as well due to strong oxidising capacity. Ineffective on pollen and allergens.
<b>Energy consumption</b>	Energy consumption ~150 W for stand-alone version.	Zero operating energy costs but system energy consumption penalised by high pressure drop that increases over time due to increasing filter clogging.	High energy consumption. Does not scale well with high flow rates to be treated.	High energy consumption during use.
<b>Waste products</b>	No waste products are generated by Aersafe filters. The UV lamp is applied to the water and has an average life of 8 years.	Maintenance requires replacement of the filters, resulting in by-products dangerous to health (with high disposal costs plus expenses for recovery, transport, packaging etc.).	Lamp life is limited (8,000 h on average, equivalent to about one year's use). Replacement is expensive and often complicated.	Ozone systems do not directly produce waste, however ozone itself is a pollutant, toxic and dangerous element.
<b>Maintenance costs</b>	Low maintenance costs.	High maintenance costs. Short life cycle of filter devices	The short life cycle of the lamp increases maintenance costs.	Due to the hazardous nature of ozone-producing devices, they must always be used by qualified personnel.
<b>Noise level</b>	< 40 Db during operation at maximum air flow.	They require the use of high pressure fans to overcome the pressure drop introduced by the HEPA filters. These types of fans are particularly noisy (~60 Db for similar air flow rates).	Virtually zero noise.	Limited noise but this is irrelevant as they must be used in the absence of people.
<b>Filter replacement</b>	Not necessary thanks to the self-washing and UV sterilisation system.	Filter changes necessary with variable timing (one replacement per month ÷ 1 per year).	Not a filtration system.	Not a filtration system.
<b>Operational continuity</b>	Capable of 24-hour service	During maintenance/replacement of filters in conveyed systems, the ventilation system must be interrupted and complex and costly operations must be carried out to avoid environmental contamination and staff contagion.	During maintenance/filter replacement of conveyed systems, the ventilation system must be interrupted and complex maintenance operations must be undertaken	It requires discontinuous use and is only applicable when there are no people around. Must be operated by trained personnel and requires ventilation of the environment after use
<b>Critical aspects</b>	No negative effects. Makes the best of all available technologies.	Inability to diagnose a malfunction in real time with potentially huge health repercussions.	Production of potentially dangerous catabolites. Reduced efficacy over time due to dimming of lamps over time.	Its high toxicity makes it only applicable in very limited contexts of use.
<b>Suitable for</b>	Any indoor environment with the presence of people. Stand-alone version designed for all locations not equipped with centralised air management systems.	Installed in centralised ducted air management systems where there is a need for particularly filtered air at the expense of high operating and maintenance costs and high noise levels.	Potentially applicable to any environment but limited by the volume of air they can treat and by the by-products generated.	Only applicable in environments with discontinuous use where there are no animals or plants. They do not allow the environment to be kept sanitised during the presence of people.