

AeraMax FAQ's

1. What Filtration do the AeraMax Units use

The main filters are;

- a) True HEPA Filters
- b) Activated Carbon Filters

2. What is a HEPA filter?

HEPA stands for High Efficiency Particulate Air. HEPA filters provide a very high level of filtration efficiency for the smallest as well as the largest particulate contaminants. As defined by the Institute of Environmental Sciences and Technology, IEST-RP-CC001.3 and MIL-STD-282 Method 102.9.1, a HEPA filter must

capture a minimum of 99.97% of contaminants at 0.3 microns in size. (HEPA filters capture much smaller particles (See Below))

The 0.3-micron benchmark is used in efficiency ratings, because it approximates the most difficult particle size for a filter to capture. HEPA filters are even more efficient in removing particles that are smaller than 0.3 microns and larger than 0.3 microns. The fact that a HEPA filter's removal efficiency increases as particle size decreases below 0.3 microns is counter intuitive. However, this is a proven and accepted fact in the filtration sciences. The filtration mechanisms below explain how a HEPA filter does this.

4 Filtration Mechanisms

There are four basic ways media captures particles:

- Inertial Impaction:

Inertia works on large, heavy particles suspended in the flow stream. These particles are heavier than the fluid surrounding them. As the fluid changes direction to enter the fibre space, the particle continues in a straight line and collides with the media fibres where it is trapped and held.

- Diffusion:

Diffusion works on the smallest particles. Small particles are not held in place by the viscous fluid and diffuse within the flow stream. As the particles traverse the flow stream, they collide with the fibre and are collected.

- Interception:

Direct interception works on particles in the mid-range size that are not quite large enough to have inertia and not small enough to diffuse within the flow stream. These mid-sized particles follow the flow stream as it bends through the fibre spaces. Particles are intercepted or captured when they touch a fibre.

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- Sieving:

Sieving, the most common mechanism in filtration, occurs when the particle is too large to fit between the fibre spaces.

3. What is activated Carbon?

Carbon filtering is a method of filtering that uses a bed of activated carbon to remove contaminants and impurities such as Volatile Organic Compounds and Odour, using chemical adsorption.

Activated carbon works via a process called adsorption, whereby pollutant molecules in the fluid to be treated are trapped inside the pore structure of the carbon.

4. How often to the filters need changing?

This is dependant on how busy an environment is or how much contamination is generated. On average. The 1st set of filters (which are included in the machine when it is delivered) will last for around 6 months. The replacement Hybrid filter will last for around 12 months.

There is an indicator light on the unit which lets the end user know when the filter is at 90% of its lifespan

5. How many fans speeds are there?

Each machine has 5 fan speeds. The unit can be set in manual mode to run constantly on a chosen speed. The higher the fan speed the more air changes per hour (ACH) are achieved. In an average dental surgery of 16m², the AeraMax Pro 5 can achieve 16 – 18 ACH which will significantly reduce the fallow period. Fan speed 4 would achieve 10 – 12 ACH.

6. What is the Airflow of each machine?

AeraMax Pro 3 & 3 PC		AeraMax Pro 4 & 4 PC	
Fan Speed	Airflow (m ³ /hour)	Fan Speed	Airflow (m ³ /hour)
1	129	1	260
2	158	2	316
3	190	3	381
4	238	4	476
5	374	5	748

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7. Air Changes per Hour (ACH)

AeraMax Pro 3 & 3 PC	
Area	ACH
30m ²	5
55m ²	3
AeraMax Pro 4 & 4 PC	
Area	ACH
60m ²	5
110m ²	3

NB: In a dental setting carrying out Aerosol Generating Procedures (AGP) we would recommend up to 5 ACH

Remove the NB above and add the following which is also in point 5;

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8. How is the AeraMax pro unit installed?

Wall mounted by a qualified electrician is the preferred installation method. The unit is available on a stand but the number of Air Changes Per Hour (ACH) is reduced by 20%

9. Power requirements?

AeraMax Pro 3 & 3 PC
220-240v, 50/60 Hz, 0.9A
AeraMax Pro 4 & 4 PC
220-240v, 50/60 Hz, 1.4A

10. What is the power consumption?

AeraMax Pro 3 & 3 PC		AeraMax Pro 4 & 4 PC	
Fan Speed	Power Consumption (W)	Fan Speed	Power Consumption (W)
1	5	1	8
2	8	2	12
3	11	3	18
4	21	4	35
5	109	5	180

11. Electrical Safety Certification?

All units have the following safety certification;

TUV, GS, CE

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12. What are the noise levels of each machine?

AeraMax Pro 3 & 3 PC		AeraMax Pro 4 & 4 PC	
Fan Speed	Sound Pressure (dB)	Fan Speed	Sound Pressure (dB)
1	38	1	42
2	41	2	44
3	48	3	51
4	52	4	53
5	67	5	68