

FILTERED MOBILE PATHOGEN IONIZER AIR STERILIZER

TECHNICAL SPECIFICATION

1. SUBJECT

This Technical Specification covers the technical characteristics, control and inspection methods of units of Filtered Mobile Pathogen Ionizer Air Sterilizers to be used in

2. MEDICAL AND TECHNICAL SPECIFICATIONS:

- 2.1.** The Filtered Mobile Pathogen Ionizer Air Sterilizer device shall be of compact structure and shall have the capacity to perform air sterilization of uncontrolled enclosed contaminated environments on its own, depending on the environment, without the need for any additional device.
The device shall be suitable for use in rooms of patients with low immune systems and high susceptibility to contamination, other hospital units and clinics, and laboratories, for air disinfection in uncontrolled areas for the removal of infectious microorganisms and pathogens.
- 2.2.** While removing airborne pathogens, bacteria, viruses, ethylene agents, and oxide gases present in the environment, the Filtered Mobile Pathogen Ionizer Air Sterilizer device shall draw air into itself and ensure that the air supplied back to the environment is sterilized inside the device.
- 2.3.** The negative ion generator contained in the device shall apply electrostatic ion charging to micro-particles and infectious pathogens present in the environment and break them down.
- 2.4.** The device shall include a G4 type pre-carbon filter and an HEPA – H13 type main filter. Particles larger than 0.3–0.5 μm shall be retained.
Pre-filtration shall be performed by the pre-filter located at the bottom of the device.
In addition, the air drawn into the device shall be passed through the ionizer and UV lamp.
- 2.5.** The system shall include an atmospheric plasma ion generator effective against infectious microorganisms, consisting of cylindrical borosilicate glass tubes coated with TiO_2 , AgI, and CuS, providing effective air disinfection.
The device shall operate with a state-of-the-art HV Atmospheric Plasma system (5000 V plasma). With the aid of this plasma source, the device shall also be able to break down resistant long ethylene agents that cannot be filtered.
- 2.6.** The air drawn from the environment shall additionally be passed through ultraviolet light. The device shall include two (2) 15-watt UV-C disinfectant light sources at 254 nm wavelength and two (2) 18-watt catalytic light sources at 400–700 nm wavelength.
- 2.7.** Within the first one hour after the Pathogen Ionization system is started, it shall be able to perform 96% biodecontamination in the area determined as suitable.
At least one effectiveness test report obtained from the microbiology department of a university, stating this feature of the delivered device, shall be submitted to the tender commission.
It shall be preferred that the device is the most advanced among its equivalents.
- 2.8.** No technical team shall be required for installation.
The pre-filter, main filter, and UV lamps of the device shall be easily replaceable without the need for a technician, and the device shall be easy to maintain.
- 2.9.** The air passage rate inside the device shall be at least 4.20 m^3/min , the device capacity shall be at least 250 m^3/h , and it shall disinfect the air of an area with a volume of 80 m^3 .
The device shall have an ergonomic structure, and when air flow occurs from the device, no air turbulence effect shall be created in the environment.
- 2.10.** The device shall be manufactured from stainless 304 sandblasted steel, shall not emit electromagnetic waves, and shall have Faraday cage characteristics.
There shall be no welding at the plasma-resistant stainless steel joint points of the device.

- 2.11.** The device shall be powered from the city mains supply and shall operate at 220 V AC – 50 Hz via a grounded socket.
The maximum power consumption of the device shall not exceed 650 watts.
The device shall include an EMC / varistor filter.
There shall be a red indicator light showing that the device is in operation and an on/off button on the device.
- 2.12.** The minimum–maximum air speed mode adjustment shall be possible via remote control.
The device shall have a remote control.
- 2.13.** The device shall be capable of operating continuously for 24 hours in the presence of people in the environment.
The device shall operate in compliance with mains voltage throughout Türkiye and shall have a mechanism capable of compensating at least $\pm 10\%$ variations in mains voltage.
- 2.14.** The system shall occupy minimal space and be ergonomic.
The height of the device from the floor shall not exceed 85 cm $\pm 10\%$.
The device shall be mobile and have 4 wheels; the feet of the device shall be lockable, and wheel movement shall be preventable when desired.
The noise level of the system at maximum power shall be at most 60 dB at 1 meter.
- 2.15.** The device shall be covered by a 2 (two) year warranty against manufacturing and fabrication defects, excluding consumables. A paid spare parts guarantee shall be provided for 10 years.