

Antibacterial and antiviral activity of the
S140UV-A141UV-PURE AIR BOX BY
HAVERLAND equipment

cliente	GLAZIAR ELECTRICAL APPLIANCES, S.L. 20-P00586
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centro tecnológico

Biotechnology Department

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Type of test	Disinfection equipment efficacy test
Test Disinfection Equipment	S140UV-A141UV-PURE AIR BOX BY HAVERLAND
Test organisms	<ul style="list-style-type: none"> - <i>Escherichia coli</i> ATCC 8739 - <i>Escherichia</i> phage MS2 ATCC 15597-B1 (has been applied as a surrogate for pathogenic respiratory viruses as Influenza or Coronavirus) <p>ATCC: American Culture Collection</p>
Test Surfaces	AISI 316 Stainless steel surfaces 50 x 50 mm
Test Methodology	<ol style="list-style-type: none"> 1. Strains preparation. Test inoculum was prepared to reach a concentration of 10^8 cells/ml. 2. <i>Escherichia coli</i> ATCC 8739 is inoculated on stainless steel surfaces in the first test. 3. MS2 coliphage is inoculated on stainless steel surfaces in the second test. 4. Inoculated stainless steel surfaces are disposed for 24h inside a test acrylic cabinet (305mm x 305mm x 305mm) in 3 groups of samples. <ul style="list-style-type: none"> - Control group time 0 (n=3) - Control group time 24h (n=3) - Test group time 24h (n=3) 5. S140UV-A141UV-PURE AIR BOX BY HAVERLAND equipment is running for 24 hours inside the cabinet (PCO position 3). 6. Surviving bacteria and coliphages are counted after 24h on adequate media plates.
Test Results	Tables below

Test organism	Samples n=3	Organism count after exposure (cfu/surface)	Organism count after exposure \log_{10} cfu/surface	Bacterial Reduction (R= $U_t - A_t$)	% Bacterial Reduction
<i>Escherichia coli</i>	Control group t0	$3,0 \times 10^7$	7,48		
	Control group t24h	$1,7 \times 10^4$	4,24		
	Test group t24h	$4,5 \times 10^1$	1,65	2,59	99,74%

Test organism	Samples n=3	Organism count after exposure (pfu/surface)	Organism count after exposure \log_{10} pfu/surface	Virus Reduction (R= $U_t - A_t$)	% Virus Reduction
MS2 coliphage	Control group t0	$3,0 \times 10^7$	7,48		
	Control group t24h	$1,0 \times 10^7$	7,00		
	Test group t24h	$4,5 \times 10^2$	2,65	4,35	99,99%

Notes:

- cfu: colony forming unit; pfu: plaque forming units.
- Count results on the table are the average value of 3 counts (3 test samples), after exposure time.
- U_t : Average value of the Log counts (\log_{10}) in the negative control (untreated samples), after exposure.
- A_t : Average value of the Log counts (\log_{10}) in the test samples (treated samples), after exposure time.