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Declaration of test and assessment

Danish Technological Institute has performed tests of the efficiency for inactivation virus of the Jimco MAC500 air purifier.

The test was conducted with the unit installed in a 20 m³ sealed room. The efficiency of the air purifier was tested using MS2 bacteriophages (ATCC 15597-B1) on host *Escherichia coli* (ATCC 15597) as a virus surrogate. The rate of inactivation of the aerosolized MS2 was determined as the difference between the natural inactivation rate and the inactivation rate measured during the use of the Jimco MAC500 air purifier. These inactivation rates were determined by sampling of the air in the chamber over a 2-hour period. The significant and consistent difference between the Natural decay test and the Product test clearly shows a reduction of the concentration of airborne and active MS2 caused by the air purifier.

Based on the measured inactivation efficiency of the MAC500, the reductions in % and in log-reductions are calculated and are found in the table below:

Product attribution	1 hour	2 hours	3 hours
Reduction, %	89% ± 8%	99% ± 2.3%	99.9 ± 0.5%
Log-reduction (base 10)	0.97 ± 0.24	1.93 ± 0.47	2.9 ± 0.71

The full testing procedures and results are presented in report no. 933322.

According to Kowalski* and Walkert† the UV-susceptibility for bacteriophage MS2 is lower than the UV-susceptibility for the enveloped virus, vaccinia virus. Hence, the indicated efficacy of the tested MAC500 UV-C device to degrade the bacteriophage MS2 will be at least similar to the efficacy against enveloped vaccinia virus. Efficacy against vaccinia virus allows for a claim for efficacy against all enveloped viruses (e.g. MERS-CoV, SARS-CoV-1 and SARS-CoV-2) according to DS/EN 14885:2018.

* Kowalski W. Ultraviolet Germicidal irradiation Handbook. Springer 2009

† Walker and Ko, ENVIRONMENTAL SCIENCE & TECHNOLOGY / VOL. 41, NO. 15, 2007

Best regards,

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