DISINFECTIONS EFFICIENCY OF UVC LAMP U & Z

MANUFACTURE ΕΛΟΤ ISO 9001:2008	AIR PLUS - AIR PLUS - XENITOPOULOS & SIA E.E Profiti Ilia 27 Pylaia Thessaloniki, PC 55535, Greece TRADE -TECHNICAL SUPPORT OF AIR CONDITIONNING AND UVC SYSTEMS.	EC 60335-1 Rohs — TEST REPORT SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES 9/20/2020
LVD 2014/35/EU IEC EN 60335 -1 IEC EN 60335 -2 IEC EN 60529 IEC EN 60417	AIR PLUS - XENITOPOULOS & SIA E.E Technical Consulting Consulenza Tecnica KAPACERT Viale Ortles, 22/4 20139 Milano (MI) Italy	SGS STANDARDS –CSTC — TEST RESULT:Validations of disinfection efficacy of sterilization and disinfections instruments.Technical Standard for Disinfection 2002 Ministeri of Health P.R China
EMC TEST	REPORT BALLAST CONTROL POWER LINE CONDUCTED EMMISSIONS / RADIATIONS EMISSION TEST / MAGNETIC TEST – ELECTROSTATIC TEST – RADIO FREQUENCY.	

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Test Result(s):
Validation of disinfection efficacy of sterilization and disinfection instruments*
Test Method: Technical Standard for Disinfection (2002 Ministry of Health P.R.China)- 2.1.5.4

Test organism	Test groups	Average number of positive controls (cfu/pcs)	Average number of testing groups (cfu/pcs)	Killing rate (%)	Sterilization logarithm
Escherichia coli 8099	1	4.2×10^6	9.0×10^2	99.98	3.67
	2	3.9×10^6	8.7×10^2	99.98	3.65
	3	4.0×10^6	8.7×10^2	99.98	3.66

Test Result(s):
Virus inactivation test*
Test Method: Refer to Technical Standard for Disinfection (2002 Ministry of Health P.R.China)- 2.1.5.4

Virus and host cell	Action time and distance	Group	Logarithm of infectivity titre of virus $lgTCID_{50}/mL$	Infectivity titre of virus $TCID_{50}/mL$	Sterilization logarithm (KL)	Virus killing rate %
H3N2 *Influenza A virus* Host cell: MDCK	20min 3m	Control group 1	5.80	6.31×10^5	/	/
		Control group 2	6.00	1.00×10^6	/	/
		Control group 3	5.80	6.31×10^5	/	/
		Test group 1	4.50	3.16×10^4	1.30	94.99
		Test group 2	4.57	3.72×10^4	1.43	96.28
		Test group 3	4.43	2.69×10^4	1.37	95.73

Test Result(s):
Validation of disinfection efficacy of sterilization and disinfection instruments*
Test Method: Technical Standard for Disinfection (2002 Ministry of Health P.R.China)- 2.1.5.4

Test organism	Test groups	Average number of positive controls(cfu/pcs)	Average number of testing groups (cfu/pcs)	Killing rate (%)	Sterilization logarithm
Staphylococcus aureus ATCC 6538	1	1.1×10^6	2.6×10^2	99.98	3.62
	2	1.2×10^6	3.0×10^2	99.98	3.60
	3	1.2×10^6	2.8×10^2	99.98	3.63

Test Result(s):
Virus inactivation test*
Test Method: Refer to Technical Standard for Disinfection (2002 Ministry of Health P.R.China)- 2.1.5.4

Virus and host cell	Action time and distance	Group	Logarithm of infectivity titre of virus $lgTCID_{50}/mL$	Infectivity titre of virus $TCID_{50}/mL$	Sterilization logarithm (KL)	Virus killing rate %
Influenza A virus H1N1 (A/PR/8/34) Host cell: MDCK	20min 3m	Control group 1	5.75	5.62×10^5	/	/
		Control group 2	5.80	6.31×10^5	/	/
		Control group 3	5.67	4.68×10^5	/	/
		Test group 1	4.33	2.14×10^4	1.42	96.20
		Test group 2	4.43	2.69×10^4	1.37	95.73
		Test group 3	4.33	2.32×10^4	1.34	95.43

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The UVC LAMP as a wavelength of 253.7nm, which complies with CDC's recommendations. At the same time, it is important to underline that coronaviruses have been found as highly susceptible to germicidal UV irradiation, taking into consideration that UVC directly interacts with nucleic acids, causing the formation of nucleotide dimers and has been used widely for the inactivation of the mechanism of genome replication. There are plenty of studies which show that using C-band with a wavelength of 253,7nm the microbial safety can improve. Below there is a list of references justifying the efficacy.

The CEMIPAI laboratory tested the virucidal activity of the UV technology on the SARS-CoV2. It was demonstrated that, in the biosafety 3 laboratory environment, with the following conditions: 2 passages of 4 seconds, a wavelength of 254nm and a distance of 1cm from the virus, the infectivity of the virus is reduced by more than 6 log is a reduction of 99.9999%, which corresponds to a complete inactivation of the virus. The validation is applicable to the UV dose tested, that is to say a scan contact time of 8 seconds for an area of 30cm x 50cm. This exposure time can be decoupled into two passages of 4 seconds. The results relate only to the product under test. CEMIPAI confirms that it has validated the virucidal action of "BIO-SCAN LIGHT" on the SARS-CoV-2 virus responsible for COVID-19

Direction of the CEMIPAI:

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