

MICROBIOLOGICAL EFFICACY ANALYSIS REPORT

Number: 38670653/338

Bornova-Izmir

Subject: Analysis

20.11.2020


Report Registration Number	BP200158-1
Full name of product	Neffes 400 U HAVA TEMİZLEME CİHAZI (NFS 400 U)
Owner of the Licence/product	Form Endüstri Tesisleri Sanayi A.Ş.
Product Type	Biocidal products without active substances
Area of use	Air Disinfection
Properties of Cabin (Size, UV lamp count)	It is specified in the scheme in Annex-1 of the cabinet.
Properties of UV lamp	1 Uv-C lamp, 25 watts
Size of Aerosols	4-10 µm
Temperature-humidity	24 °C-50 %
Application time	15 ,30 and 60 minutes
Start and end date of Analyses	14.10.2020-28.10.2020
Evaluation	Neffes 400 U HAVA TEMİZLEME CİHAZI (NFS 400 U) achieved > 4 log reduction at the specified test conditions over 30 minutes, 4.79 for <i>Serratia marcescens</i> ATCC 14756.


Analyst

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MICROBIOLOGICAL TEST RESULTS	
METHOD	GB 21551-3, 2009; ASHRAE, 2014a; ISO 15714, 2019
AIR SAMPLING METHOD	Active air sampling /Merck MAS 100
PLATE COUNT METHOD	Air sampling method and pour plate technique
TEST ORGANISMS	<i>Serratia marcescens</i> ATCC 14756
INCUBATION TEMPERATURE AND TIME	32 °C (±1), 24-48 hours
MEDIUM USED IN TEST	Nutrient Agar
SUMMARY OF THE METHOD	<p>Suspension of 18-20 hours test organisms was prepared according to McFarland No: 2 (6.0×10^8 cfu / ml). This suspension was sprayed in the form of aerosol of 4-10 μm into the test cabin where the tested device was located. In order to determine the amount of bacteria decreasing spontaneously, air samples were taken in 15-minute periods with the air sampling device to the petri dishes containing the medium (Control trial). Before the device was started (0 minutes) and after the device was started, air samples were taken back to the petri dishes with the air sampling device at periods in accordance with the technical specifications of the device. Colonies were counted after the petri dishes were incubated at $32 \pm 1^\circ\text{C}$ for 24-48 hours. Time dependent calculation obtained in control trials is given in the table "Before UVC Application". Here, the spontaneous reductions obtained depending on the time were subtracted from the logarithmic reduction value obtained after UVC application.</p> <p>Spontaneous reduction ($\log R_K$) = Control Test bacterial count at 0 min ($\log N_{K0}$) – Control test t. bacterial count per minute ($\log N_{Kt}$)</p> <p>Amount of reduction ($\log R$) = [0. Bacterial count per minute ($\log N_0$) - Spontaneous reduction ($\log R_K$)] - Bacteria count after application ($\log N_t$)</p>



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Test Organism (<i>Serratia marcescens</i> ATCC 14756)			
Before UVC Application			
Time (min)	Colony count (cfu/m ³)	Log	Spontaneous reduction according to initial concentration (LogR _k)
0	3.4 x 10 ⁷	7.53	-
15	9.2 x 10 ⁶	6.96	0.57
30	5.2 x 10 ⁶	6.72	0.81
60	5.3 x 10 ⁵	5.72	1.81
After UVC Application			
Time (min)	Colony count (cfu/m ³)	LogN _t	LogR
0	8.0 x 10 ⁷	7.90	-
15	4.1 x 10 ⁵	5.61	1.72
30	4.4 x 10 ⁴	4.64	2.45
60	<20	<1.30	>4.79



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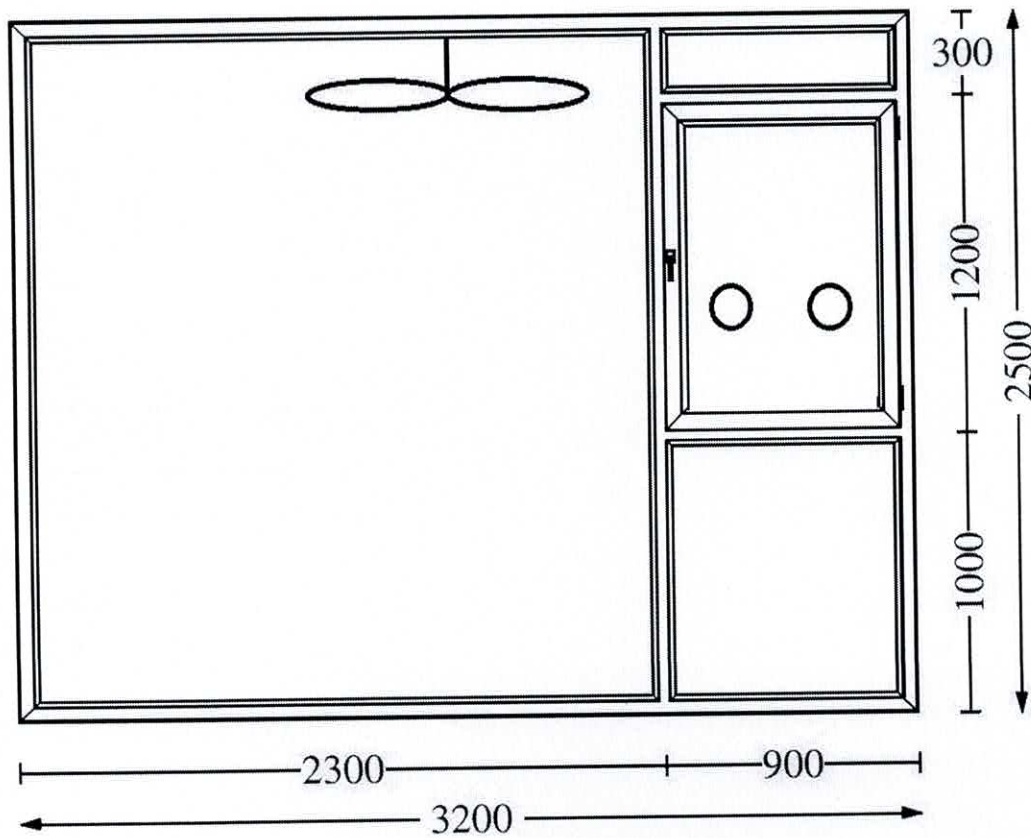
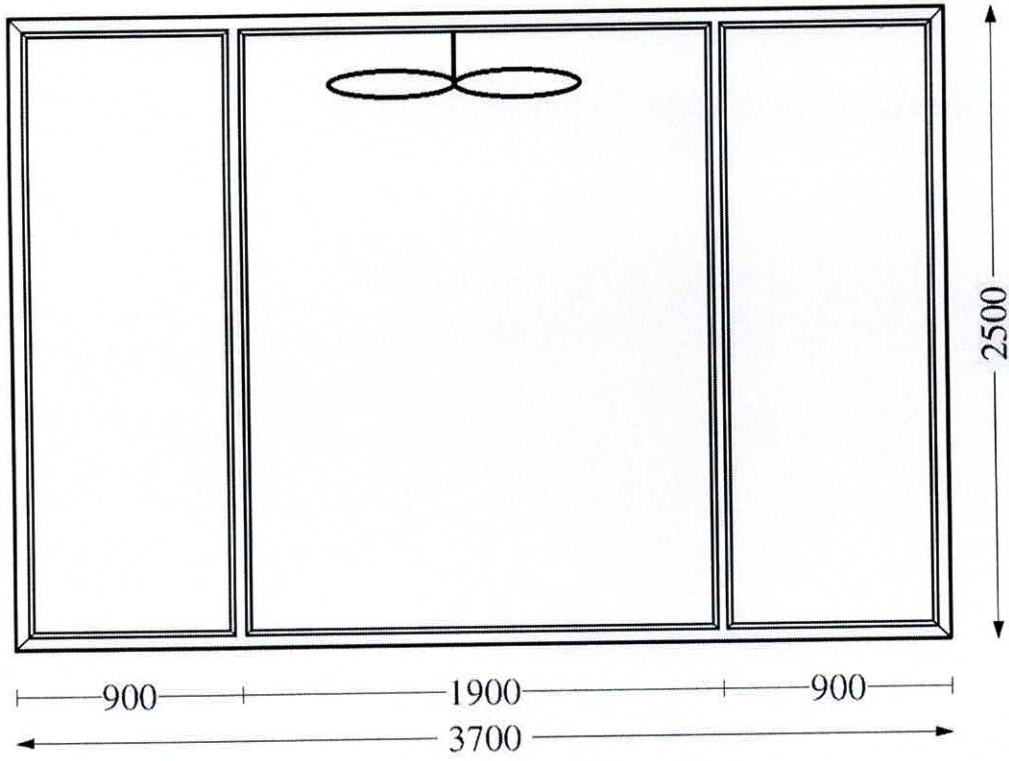
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Annex 1: Scheme and dimensions of the cabinet



MICROBIOLOGICAL EFFICACY ANALYSIS REPORT**NOTE:**

1. This report includes only results of delivered samples.
2. Test results cannot be used for commercial purposes on TV or in press.
3. This report shall not be copied or transmitted without the written permission of the laboratory.
4. This report is not valid without signature.
5. We shall not be held responsible for the determination of test items and operation of the sampling procedure.



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