EKOTEKS LABORATUVAR ve GÖZETİM HİZMETLERİ A.Ş.
Esenyurt Firuzköy Bulvarı No:29 34325 Avcılar
İstanbul/ TÜRKİYE

TEST REPORT
DENEY RAPORU

21012728-ing
04-21

Customer name:	TESTPLUS TEKNİK KONTROL VE BELGELENDİRME TİC. LTD. ŞTİ.
Address:	YEŞİLCE MAHŞ. ÇELİK CAD. NO:31*33 KAT:4 D:5 KAĞITHANE İSTANBUL
Buyer name:	LTC LIGHT TRADE CENTRE AYDIN ÜR. SAN VE TİCARET LTD. ŞTİ.
Contact Person:	ONUR KASIM
Order No:	AIR DISINFECTION DEVICE
Article No:	UVC PERCTRA TUBE ULTRA 300
Name and identity of test item:	Air Disinfection Device
The date of receipt of test item:	14.04.2021
Re-submitted/re-confirmation date:	-
Date of test:	14.04.2021-22.04.2021
Remarks:	-
Sampling:	The results given in this report belong to the received sample by vendor.
End-Use:	-
Care Label:	-
Number of pages of the report:	5

Seal	***Date***	***Customer Representative***	***Head of Testing Laboratory***
	22.04.2021	Yeşim ŞAHİN	Sevim A. RAZAK 22.04.2021

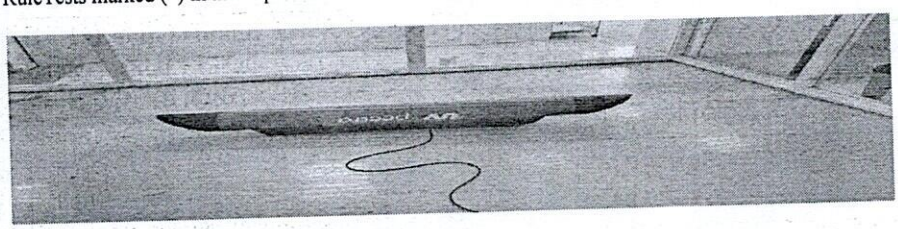
Gen.f136-2/03

REQUIRED TESTS	RESULT	COMMENTS
UV-C Lamp Without Active Ingredients Bacteriocidal Efficacy Test		
TEST MICROORGANISM		
Staphylococcus albus 8032	P	

P: Pass
F: Fail
R: Refer to retailer technologist.
GB 21551.3-2010(*) Antibacterial and Cleaning Function for Household and Similar Electrical Appliances — Particular Requirements of Air Cleaner

T.R. MINISTRY OF HEALTH General Directorate of Public Health Regulation on Disinfection with UV-C Rays
a) Letter dated 21/09/2020 and numbered 19020089-105.99-3848.
b) It was evaluated according to the letter dated 25/11/2020 and numbered 19020089-105.99-4989

REMARK: Original samples are kept for 3 months and all technical records are kept for 5 years unless otherwise specified.If requested, measurement uncertainty will be reported. But unless otherwise specified, measurement uncertainty is not considered while stating compliance with specification or limit values The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95 %. The declaration of conformity was given in accordance with the Simple Acceptance Decision RuleTests marked (*) in this report are not included in the accreditation schedule.



AIR SAMPLING TESTS

Test Method for Air Purifying Efficiency / Air Disinfecting Devices Used for Indoor Environments

Test Method: Reference GB 21551.3-2010 (*)

This test method has been developed by using biocidal product groups that do not contain active substances. Therefore, it is aimed to determine the effectiveness of air cleaner / disinfectant devices against microorganisms for indoor environments.

Flowrate of Bacteria culture	28.3 L/min
Total time of flowrate	16 min
Test Area	30 m^3
Test Conditions	(25 ± 2,5) °C and (50 ± 10) % relative humidity
Testing Microorganism	*Staphylococcus albus* 8032
***Staphylococcus albus* 8032 (kob/mL) concentration**	$2{,}0x10^5$ cfu/ mL
Volume of bacteria suspension	6 mL
Contamination Time (min)	The chamber has been contaminated by nebuliser spray method for 10 min.
Incubation Time / Temperature	24 hours / 35°C ± 2°C

1.INTRODUCTION

1.1. Summary

Pre-sampling of bacterial concentration was performed. The bacterial aerosol has sprayed by nebulizer system to into a 30 m^3 test chamber. After spraying, at the 16th min, sampling was applied. The effect of UVC PECTRA TUBE ULTRA 300 device against bacteria was calculated. Results are calculated as decreased by percentage.

2. ACKNOWLAGE ABOUT TEST

1.2. Medium and Chemicals

Medium: Plate Count Agar and Nutrient Broth
Dilution Solution: 0.9% Physiological Salt Water (PSW)

1.3. Instruments and apparatus

Air Sampler
Nebuliser
Compressor (28.3 L/min)

1.4. Microorganisms

Staphylococcus albus 8032

3.TEST PROSEDURE

1.5. Fresh cultures of bacteria have been diluted with physiological salt water (FTS) and a 10 mL bacterial suspension has been prepared at a concentration of 10^7 cfu/mL and mixed with vortex to be homogeneous.

1.6. Before operating the test, the ambient air of chamber has been checked.

1.7. 6 ml of the bacterial suspension that descripted in section 3.1 has been put into the reservoir of the nebulizer system.

1.8. The compressor has been run and the entire liquid bacteria solution has been delivered into the test chamber.

1.9. After the bacteria solution has been run out, the air sample has been taken with sampler at the 0th min.

1.10. UVC PECTRA TUBE ULTRA 300 device was operated for 16 minutes and then the air sample has been taken again.

1.11. After the sampling process, all petri dishes are incubated at 30 °C for 24-48 hours.

GrowthBacteria Quantity			
16 min			
Staphylococcus albus 8032	**Control (A)**	**Air Disinfecting Device (B)**	**%Decrease (mean)**
Bacteria Quantity [1] (cfu/100 L)	9.00×10^7	7.95	94.56%
Logarithm	4.90×10^6	6.69	
Evaluation	The air disinfecting device has been performed as Log 1.26 agains to *Staphylococcus albus* 8032 after 16 min.		

CALCULATION:

[1] After duration of incubation bacteria quantity has been count. Calculation has been done based on below formula. Test results was the arithmetic mean of 3 test results that repeated on the same day.
cfu: coloni forming unit

$$R\,\% \frac{(A)\ Bacteria\ quantity\ at\ 0th\ \left(\frac{cfu}{mL}\right) - (B)\ Bacteria\ quantity\ after\ disinfected\ \left(\frac{cfu}{mL}\right)}{(A)\ Bacteria\ quantity\ at\ 0th\ \left(\frac{cfu}{mL}\right)}$$

(A): *Bacteria quantity at 0th*

(B): *Bacteria quantity after operating of device*

R %: Decrease as percentage

EVALUATION :

UVC PECTRA TUBE ULTRA 300

In order to the device to be effective, it must show a decrease of at least 4 logs. It was found that the tested device did not show a log 4 reduction for *Staphylococcus albus 8032* bacteria after 16 minutes.