Customer Name	Arçelik
Customer Address	Çayırova Campus, Tuzla, 34950 Istanbul, Turkey
Contact	Fatih Kasap
Test Requested	Assessment of effect of test device on bacterial and viral viability
Sample Description	UV-C Disinfection Unit BEKO UVT 5033 TA / 7730430201
Number of Samples	1
Date of Receipt	24 July 2020
ASC Code	ASC003963
Report Number	ASCR092442
Report Date	21 January 2021

1. Purpose

This report outlines the results of the study performed to assess the ability of the:

- UV-C Disinfection Unit (BEKO UVT 5033 TA)
    - UV-C and heat-assisted disinfection program for 40 minutes UV Cleaning

to remove bacteria and virus.

2. Test Item Description

The UV-C Disinfection Unit (BEKO UVT 5033 TA) was submitted to *airmid healthgroup* on 24th July 2020 (Figure 2.1).

Figure 2.1. UV-C Disinfection Unit

3. Materials

3.1. ***Staphylococcus aureus*** subsp. ***aureus*** Rosenbach (ATCC® 6538™)

S. aureus is a Gram-positive, round-shaped bacterium that is a common member of the microbiota of the body, frequently found in the upper respiratory tract and on the skin.

3.2. ***Escherichia coli*** (Migula) Castellani and Chalmers (ATCC® 8739™)

E. coli is a Gram-negative, facultative anaerobic, rod-shaped, coliform bacterium commonly found in the lower intestine of warm-blooded organisms.

3.3. Human Coronavirus 229E (ATCC® VR-740™)

Coronaviruses were first discovered in the 1960's, causing upper respiratory tract infections in healthy individuals and serious disease in patients with comorbidities. Pathogenic human coronaviruses (HCoV) were subsequently identified, beginning with the discovery of SARS-CoV in 2002 and the recent detection of SARS-CoV-2. There are now seven identified human coronaviruses, those causing mild disease (229E, OC43, NL63, HKU1) and those causing severe respiratory illness (SARS-CoV, MERS, SARS-CoV-2). HCoV-229E was the chosen model for this project as it is a biosafety level 2 pathogen with similar genetic and protein composition to the SARS-CoV-2 virus.

6. Conclusion

The UV-C Disinfection Unit (BEKO UVT 5033 TA), UV-C and heat-assisted disinfection program for 40 minutes was demonstrated to be effective in reducing the tested bacteria and virus, achieving 99.99 % reduction against *S. aureus*, 99.99 % reduction against *E. coli*, and 99.97% reduction against Human coronavirus 229E. HCoV-229E was the chosen model for this project as it is a biosafety level 2 pathogen with similar genetic and protein composition to the SARS-CoV-2 virus.

7. Additional Products

According to the Declaration of Conformity signed by Arçelik (dated 19.11.20) the products listed below conform in all aspects relating to performance in testing parameters to the UV-C Disinfection Unit (BEKO UVT 5033 TA / 7730430201)

- Beko / 7730430201 / UVT 5033 TA
- Arçelik / 7730420101 / UVT 6033 TA
- Beko / 7730430202 / UVT 5033 TA
- Voltas Beko / 7730430203 / UVT 5033 TA
- Beko / 7730430204 / UVT 5033 TA

8. References

[1]. BS EN ISO 27447:2019 Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for antibacterial activity of semiconducting photocatalytic materials

[2]. BS ISO 18061:2014 Fine ceramics (advanced ceramics, advanced technical ceramics) — Determination of antiviral activity of semiconducting photocatalytic materials — Test method using bacteriophage Q-beta

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End of Report