सी.एस.आई.आर. – केन्द्रीय वैज्ञानिक उपकरण संगठन
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद)
सैक्टर–30 सी, चण्डीगढ़ (भारत)

CSIR-Central Scientific Instruments Organisation
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Test Certificate of UV-C Irradiance

Date: 12/01/2021

Certificate No	CSIO/20-21/UV-C/02
Name of Organisation	M/s Acuva Technologies
Address	B-1964/56, Hanuman Kunj, Sant Nagar, Burari, Delhi-84
Test Conducted	Spatial Uniformity of UV-C irradiance for Acuva Solarix (UV-LED Portable Disinfection Device)
Identification Method used	• IEC 60904- 09: Photovoltaic devices - Part 9: Solar Simulator Performance Requirements (T 82 Working Group of IEC): Testing of Spatial Uniformity, Temporal Stability and Spectral irradiance • ANSI - Illuminating Engineering Society of North America: Guide for the Measurement of UV Radiation from Sources LM 55 96 • Kowalski, W. J., Walsh, T., & Vidmantas, P. (2020). 2020 COVID-19 Coronavirus Ultraviolet Susceptibility • Bianco, A., Biasin, M., Pareschi, G., Cavalleri, A., Cavatorta, C., Fenizia, F., & Saulle, I. (2020). UV-C irradiation is highly effective in inactivating and inhibiting SARS-CoV-2 replication. Inactivating and Inhibiting SARS-CoV-2 Replication (June 5, 2020). • Ultraviolet Germicidal Irradiation Handbook UVGI for Air and Surface Disinfection - Wladyslaw Kowalski, Springer Publication, 2009 • Chun-Chieh Tseng & Chih-Shan Li (2007) Inactivation of Viruses on Surfaces by Ultraviolet Germicidal Irradiation, Journal of Occupational and Environmental Hygiene, 4:6, 400-405, DOI: 10.1080/15459620701329012
Description of Instruments	Acuva Solarix (UV-LED Portable Disinfection Device)
Environmental Condition	Standard Temperature and Humidity Conditions (Temperature: 25°C. Humidity: 45% RH)

Observation:

- As per references indicated in "identification method used" section, portable disinfectant device generates sufficient energy dose to reduce single strand RNA virus (SARS CoV-2/Covid19) to more than **99.9%** while keeping the device at a 5 cm and 10 cm distance with an average time of 9.05 seconds and 35.87 seconds respectively (outliers are not included during calculations).
- Based on the peak outputs of UV LEDs, the device can generate a UV Dose of 16mJ/cm^2 in 8.32 seconds.

12/01/2021
Tested by

12/01/2021
Auth. Signatory

COA's Office: (0172) 2657900, 2672242, Fax: (0172) 2657082, COSP: (0172) 2672212, TeleFax: (0172) 2652651
SPO's Office: (0172) 2652082, COFA's Office: (0172) 2642167, 2672296, Fax: (0172) 2651756

UV-C Intensity Test Report (Portable Disinfection Device)

Methodology: The spatial uniformity of UV radiation is measured using standard UV detector placed perpendicular to the portable disinfection system. The detector is placed in the testbed at the positional coordinates (1-7) placed at the height of 5 cm and 10 cm from the base, as shown in the figure.

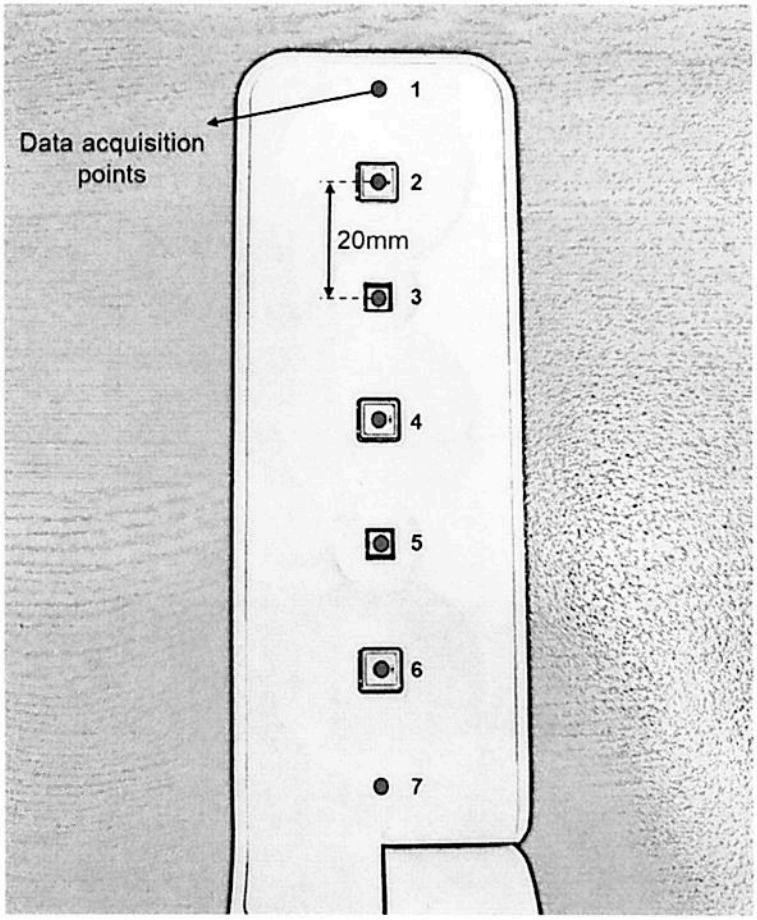

Figure: Data acquisition points for measuring irradiance

Table 1.1: Irradiance in mW/cm²

Parameters	At 5 cm	At 10 cm
Average irradiance in mW/cm²	0.441	0.111
Minimum irradiance in mW/cm²	0.327	0.091
Maximum irradiance in mW/cm²	0.614	0.186

Disclaimer: It is very important to note that the results specified are only for the tested specimen. The studies do not include any virology tests and the necessary energy dose sufficiently produced by the tested specimen is an indicative term based on the references. Actual Virology test may be included to exactly validate the same.