

Antibacterial evaluation for EV Sun LED light coated with Germicidal Resonance coating film.

Report Date: 08 January 2024

Date Received: 30 October 2023

Date of Analysis: 30 Oct 2023 – 08 Jan 2024

Test Purpose:

The test is designed for our customer to evaluate the germicidal resonance coating product coated on the EV Sun LED ceiling down-light. The evaluation was conducted with reference to BSEN 17272:2000 Chemical disinfectants and antiseptics — Methods of airborne room disinfection by automated process — Determination of bactericidal, mycobactericidal, sporicidal, fungicidal, yeasticidal, virucidal and phagocidal activities, and ASTM E3135 – 18 Standard Practice for Determining Antimicrobial Efficacy of Ultraviolet Germicidal Irradiation Against Microorganisms on Carriers with Simulated Soil

The product was developed by below company

EV Lighting Sdn Bhd

Address: Lot 3508, Jalan Cyber 14, Kawansan Perindustrian,
Senai IV, 81400 Senai, Johor, Malaysia.

Test Set up and Procedures

The test set up was requested by the client as below

Distance between light source and targeted bacteria stainless disc is 60 cm

Number of lights: 5

Testing room condition: airconditioned at 23 °C, RH 60-65%

Test organism: S-aureus – ATCC 33592 and E.coli ATCC 25922

Suspension of bacteria (1×10^5 – 50 µl per stainless steel disc carrier, 3 cm in diameter)

Spread and air dry the inoculum

contact timing at 5 min, 30 min, 60 min, 6 hrs and 24 hrs

Test Results

A standard bacteria concentration suspension solution and fixed 50 µl amount was introduced to the testing stainless steel discs then under airconditioned environment, the bacteria were contacted with light with different contacting time.

The bacteria colony count reduction after light contacting time together with natural decay was showed below,

S. aureus ATCC 25923

Contact Time, min	Concentration of contaminated bacteria, CFU/ml	Concentration of bacteria in contact time, CFU/ml	Concentration of bacteria on blank, CFU/ml	Reduction of bacteria in percentage, (%)	Bacteria reduction lg
0	21000	21000	0	0	0
5	21000	14000	0	33.33333333	0.18
30	21000	11000	0	47.61904762	0.28
60	21000	9800	0	53.33333333	0.33
6 hr	21000	60	0	99.71428571	2.54
24 hr	21000	13	0	99.93809524	3.21

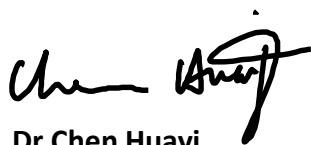
E. coli ATCC 25922

Contact Time, min	Concentration of contaminated bacteria, CFU/ml	Concentration of bacteria in contact time, CFU/ml	Concentration of bacteria on blank, CFU/ml	Reduction of bacteria in percentage, (%)	Bacteria reduction lg
0	19000	19000	0	0	0
5	19000	17000	0	10.52631579	0.05
30	19000	16000	0	15.78947368	0.07
60	19000	15000	0	21.05263158	0.10
6 hr	19000	63	0	99.66842105	2.48
24 hr	19000	3	0	99.98421053	3.80

After 6 hours contact time, the bacteria counts on the disc were reduced to 1%, and after 24 hr contact time, a few bacteria counts were present only for both bacteria (13 counts for S. aureus ATCC 25923 and 3 counts for E.coli ATCC 25922).

The above study is a performance evaluation for the light product with functional coating.

Investigator:



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