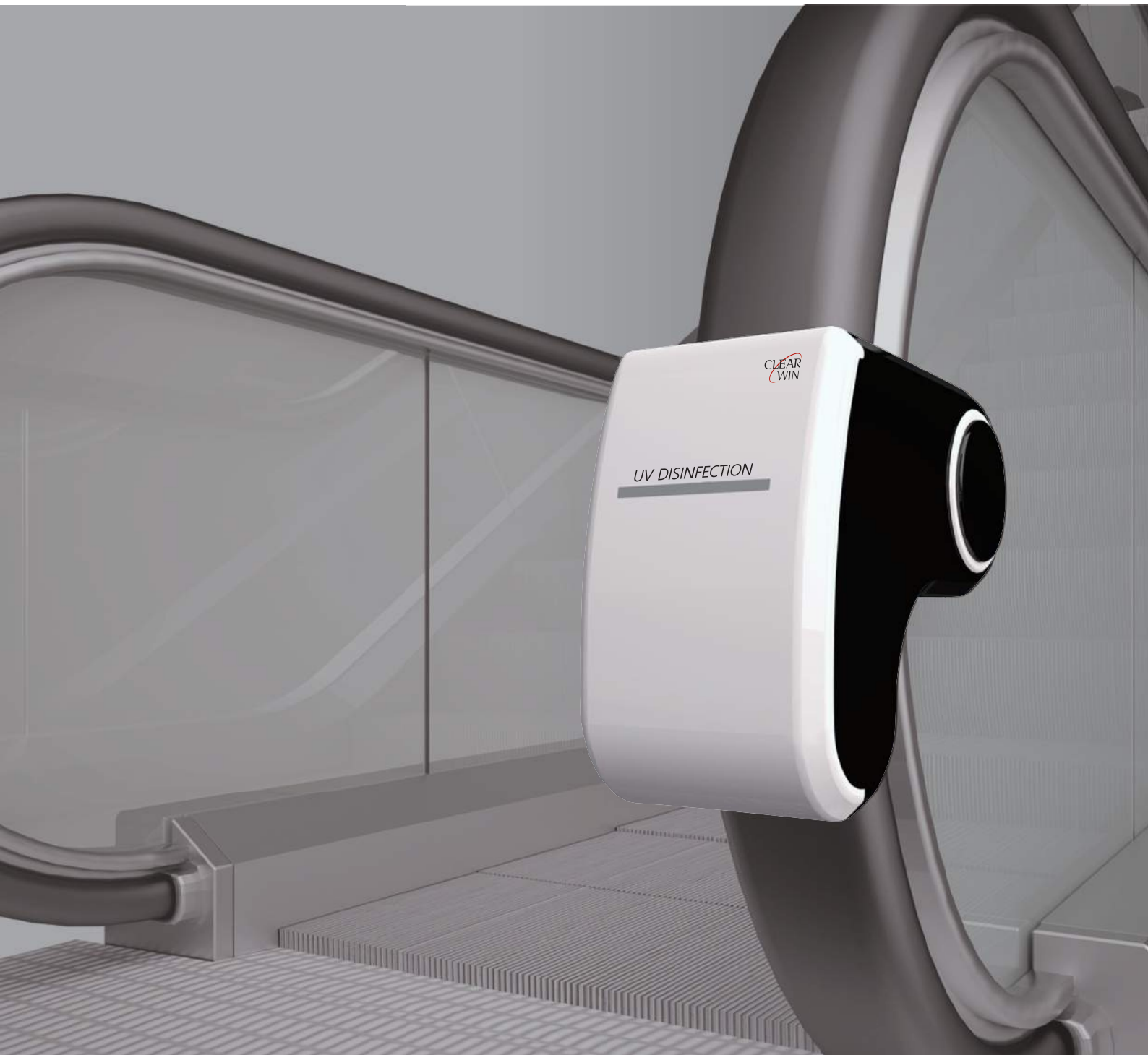




# *Non-Powered* Escalator Handrail Sanitizer



This product aims to improve the hygiene of our environments by sanitizing against bacteria and viruses, achieved by a simple installation on escalator or moving walkway handrails

## Characteristics



### **Continuous sanitization**

Strong and continuous sanitization along with escalator drive



### **Easy installation**

Maintain existing facilities as they are



### **Compact and safe design**

No disruption to the passenger



### **UV-C Sanitization**

99.99% UV-C sanitization most suitable method for handrails



### **Self generation**

Safe self generation method without the danger of electrical hazards



### **Promotional printing**

Company logo printing is available on the front cover



### **Safety**

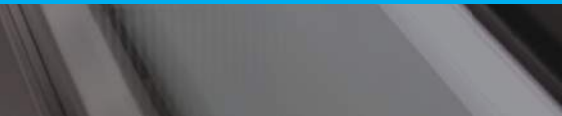
Multiple safety devices to prevent finger entrapment



MADE IN KOREA



# *Escalators and Moving walkways installation facility*





# PRODUCTS

## | SUS TYPE |

For stainless steel balustrade  
escalators/walkways

## | GLASS TYPE |

For tempered glass balustrade  
escalators/walkways

### ■ STANDARD VERSION

Original patent design



CWK-WS001



CWK-WG001

### ■ WIDE VERSION

Improved safety feature design



CWK-WS001A



CWK-WG001A



Housing

Strong L-shape structure  
Stainless steel



UV-C LED

Effective Ultra Violet C-wavelength  
Dual UV-C LED lamp



Power module

Convert rotary motion of  
handrail into electric power

## OPERATING PRINCIPLE

Housing

UV-C LED

Power Module

Roller



**A** The main body is fixed to the balustrade of the escalator / moving walkway.



**B** The torsion spring makes roller contact at a constant pressure on the handrail.



**C** The rear roller and the handrail's rotational force, generates power.



**D** The generated power activates the UV-C Germicidal lamp and operation indicator.

## SPECIFICATION

Product name	CLEARWIN	Generator output	24V, 4.0~4.5W
UV-C LED lamp	6.5mW Wavelength: 265nm	Cover	PC ABS Black and White
Product size	130x220x260mm	Origin	Made in Korea
Product weight	GLASS: 2.8kg / SUS: 1.8kg	Patent No.	10-1665676

## Comparison between UV-C sanitization and other sanitization methods

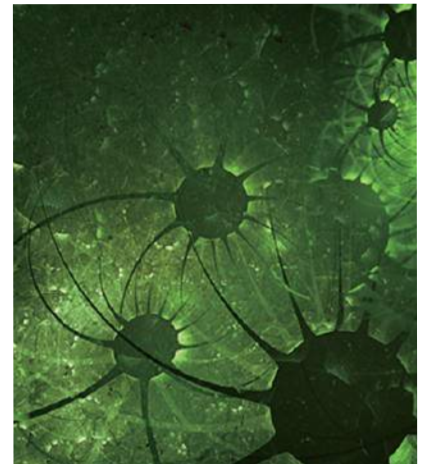
	UV-C sanitization	Heat sanitization	Ozone sanitization	Chemical sanitization	Radio-sanitization
Sanitation of mycetoma	Effective against all	Effective against all	Effective against all mycetomas	Effective against specific	Effective against all
Physical property change (Handrail)	Little change	Occasional	Occasional	Occasional	Little change
Permeability	No permeability (except air and water)	Effective even inside the object	Effective on the object surface	Effective even inside the object	Effective even inside the object
Sanitation time	Short	Considerably	Long	Considerably	Short
Usage	Easy	Occasionally	Difficult	Easy	Difficult



UV-C Sanitization dose not corrode or deform material unlike other harsh chemicals of heating systems



This CLEARWIN device can be easily installed even when the escalator is in motion.



Effective sanitization against bacteria, viruses and germs.



# Certified for sanitization against Staphylococcus Aureus and E. Coli and Coronavirus

by using the germicidal dual UV-C LED lamps.

## TEST REPORT

**COVID-19 TEST REPORT**  
Efficacy test for sanitizing device against CORONAVIRUS

JEONBUK NATIONAL UNIVERSITY  
INDUSTRY-ACADEMIC JOINT RESEARCH

Report No.: 201000044  
Host Representative: Jeongsu Cho, Kwangsu Yoo  
Company: CLEARWIN KOREA Co., Ltd.  
Address: #703, 88 Jeonpa-ro, Dongan-gu, Anyang city, Gyeonggi province, Republic of Korea

Test period: 2020.06.01 ~ 2020.07.08

**\* Test goal**  
- Evaluation of the efficacy of the virus sanitizer device commissioned by CLEARWIN KOREA Co., Ltd. in an in-vitro Environment.

Sample name: Escalator Handrail Sanitizer

TEST RESULTS(1/3)		
UV reaction times	log10CFU/mL	UV reaction times/virus removal efficiency (%)
Unrecorded	7.50	
1 time	6.50	90%
10 times	3.33	>99.99%
20 times	<0.6	>99.99%
30 times	<0.6	>99.99%

**\* Test condition**  
- As a result of the virus cell culture test, the dilution rate in which virus inactivation was confirmed becomes an effective concentration. In this case, the effective inactivation ability of the disclosed virus becomes the average value of the test results repeated 3 times.  
- Through this experiment, it was confirmed that the CORONAVIRUS has been sanitized by more than 99.99% when the CLEARWIN KOREA UV-C sanitizer device exposes the virus to the UV-C light for 0.7 second more than 10 times. (7 seconds in total)  
- This particular test is the first one out of three total tests. From the 3 tests, the virus removal rate after just one revolution resulted in 90%, 99%, and 76% respectively. All three tests had the same results where after 10 revolutions, it had 99.99% sanitization rate.

Jul. 17. 2020

JEONBUK NATIONAL UNIVERSITY  
INDUSTRY-ACADEMIC JOINT RESEARCH INSTITUTE  
KOREA ZOOZOSIS RESEARCH INSTITUTE

Attested by Notary Public  
Kwangsu Yoo  
Head of subjective research

KoZRI (Korea Zoonosis Research Institute)

**TEST REPORT**

No : C120-115222

7. Test Results

Test Items	Test method	Test Results		Testing Environment
		Early Conc. (CFU/mL)	After 30 time operation Conc. (CFU/mL)	
Antibacterial test : <i>Staphylococcus aureus</i>	Blank UV-LED [Escalator Handrail Sanitizer (Model name : ClearWin / CWK-B3001)]	1.1 x 10 <sup>6</sup>	1.1 x 10 <sup>4</sup>	(37.0 ± 0.2) °C
	Client's requirement method	1.1 x 10 <sup>4</sup>	< 10	

■ CFU : Colony Forming Unit  
■ Test bacteria : *Staphylococcus aureus* ATCC 8538  
■ Sample : UV-LED(Escalator Handrail Sanitizer (Model name : ClearWin / CWK-B3001))  
■ Client's requirement method  
- Test time : 30 time operation  
- Distance between of the medium inoculated with the bacteria and lamp of the sample : 1 cm  
■ Sample's operating time  
- 1 time operation : 9.5 seconds / Per Second interval : 60 seconds  
■ Inoculum preparation, Inoculation method, Assessment of Results : KCL-FIR-1002-2018 Mod.  
■ Location : unit108, Industry-Academic Cooperation Foundation, Hankyong National University, 327, Jungang-ro, Ansong-si, Gyeonggi-do, 15759, Korea

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TQP-12-01-01(1)

KCL (Korea Conformity Laboratories)

## CERTIFICATE

Ministry of Public Safety and Security (MPSS)

Minister of MPSS

Attachment : Escalator observation inspection criteria.

Legal approval and recommendation by Korea Government Safety Department.

Patent USA

Patent Declaration of Conformity

Patent USA

Patent USA

EC Declaration of Conformity

EMC Directive 2014/30/EU

CE

CE

CERTIFICATE OF COMPLIANCE

UL

UL

**Certified by**

KCL (Korea Conformity Laboratories) / Korean Intellectual Property Office  
KOZRI (Korea Zoonosis Research Institute) / UL, USA (UL-CA-2000959-0)  
Ministry of Public Safety and Security, Korea. (Escalator Safety section-1248)

# Hygiene is not an option, it's **essential**.



WMATA - USA



Texas Houston Airport - USA



Arsenal Football Club - UK



Manchester Airport - UK



Okinawa Na Ha Airport - Japan



SM MEGAMALL - Philippines



Samitivej Hospital - Thailand



CapitaLand - Singapore



Emirates HQ - UAE



Grand mosque - Saudi Arabia



COSTCO - Korea



CGV - Korea