

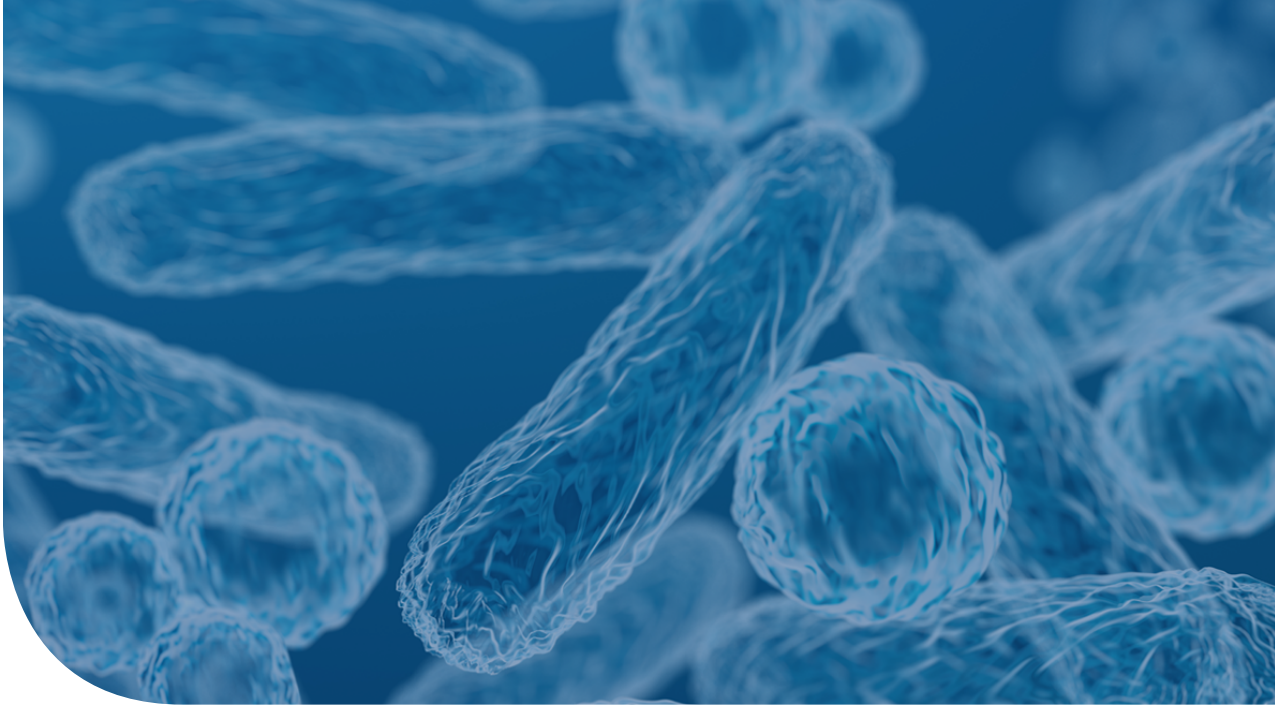
THE FUTURE IS ON®

VISCOR | a LEVITON
company



Disinfection Lighting for Occupied Spaces

Continuous surface disinfection using UVA and LED technology.



Surface Disinfection Lighting for Occupied Spaces

In commercial spaces, clients and employees alike benefit from consistent cleaning of high traffic areas. Periodic sterilization and disinfection of these spaces assist in the reduction of bacterial spread and offer occupants a sense of security and comfort. However, as these methods cannot occur continuously, they lack complete efficacy. Viscor's innovative lighting solutions integrated with 365DisInFx™ UVA Technology help minimize risk to individuals.

365DisInFx™ UVA Technology was developed from decades of experience in LED and UV lighting technology. This continuous disinfection solution significantly reduces clients' and employees' exposure to harmful bacteria so they can breathe a sigh of relief, knowing their spaces are cleaner and their best interests are at heart.

The Challenge:

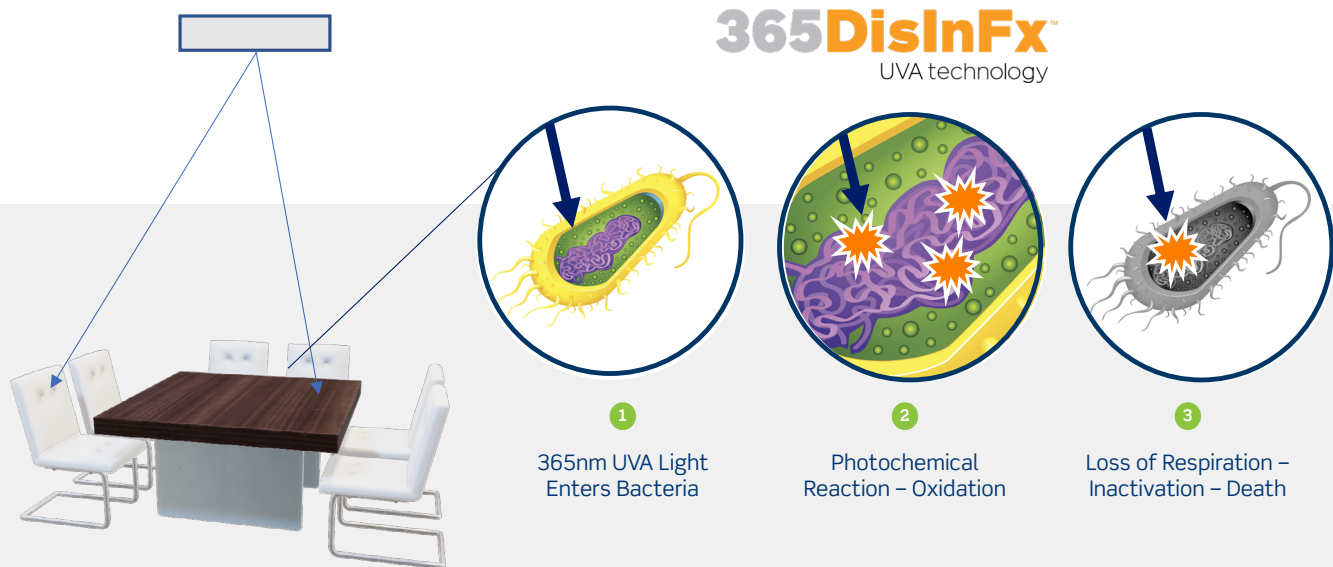
Harmful bacteria are easily passed from surface to surface in any occupied space. Traditional cleaning and disinfectant methods are periodic at best and allow for continued growth and spread of bacteria once a cleaning cycle is complete.

The Solution:

Viscor's luminaires integrated with 365DisInFx™ UVA Technology utilize 365nm UVA light to reduce harmful bacteria on various surfaces 24/7. The Visioneering DFX series continuously abates the reproduction of harmful bacteria through cellular inactivation. This automatic and continuous cleansing process strengthens existing disinfection procedures and helps to maintain cleaner spaces.

365DisInFx™ UVA Technology in Action

Understanding the technology behind bacteria reduction



365DisInFx™ UVA Technology solutions can help reduce bacteria and fungi on surfaces. In vitro testing, 365nm UVA Light has shown significant reductions in common pathogens associated with hospital-acquired infections (HAIs), such as MRSA, Staphylococcus aureus, Enterococcus faecalis, Escherichia coli, Acinetobacter baumannii, Pseudomonas aeruginosa, Candida albicans and auris.



Surface Bacteria and Fungi and % Expected* Reduction After 24 hr. Exposure @ 365nm

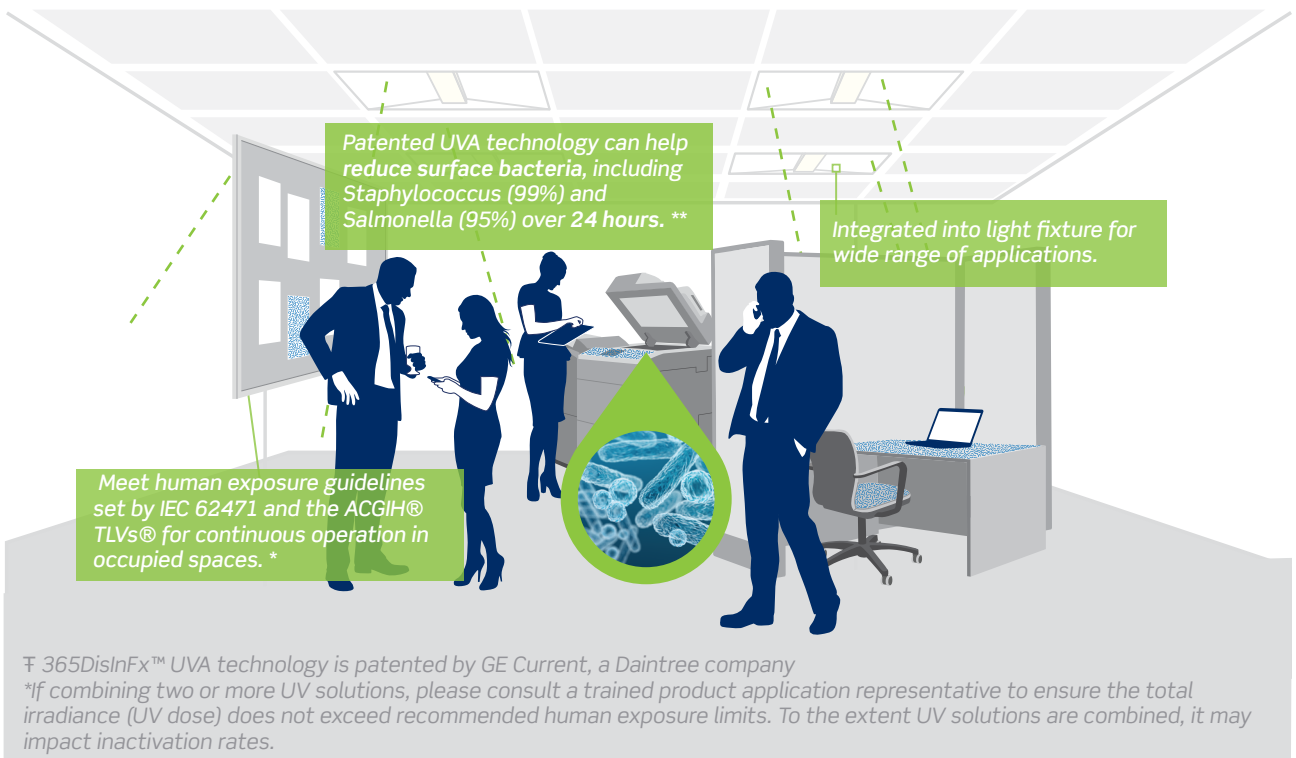
MRSA Staphylococcus Aureus	99%
Enterococcus Faecalis	89%
Escherichia Coli (E-Coli)	72%
Acinetobacter Baumannii	85%
Pseudomonas Aeruginosa	72%
Candida Auris	55%
Salmonella Enterica	95%

UVA provides expected* reduction of a range of common bacteria that cover many applications.

The Viscor DFX Advantage

Powered by 365DisInFx™ UVA Technology

- Installation is simple and user-friendly; there are no complicated controls or sensors required for 24 hour-a-day operation.
- The cost of operation is significantly lower than that of mobile UVC systems since staff is not required to operate or reposition devices.
- The performance of the white light is unaffected. Our solution uses 365nm UVA light, which leaves the ambient white light unaltered, with no visible color shift.
- 365DisInFx™ UVA Technology is more effective than visible light for surface disinfection of common bacteria. For example, it has proven to be 99% effective on MRSA Staphylococcus Aureus within a 24hr period.



Technical Summary:

Safety: 24-hour dosage is designed to operate below human health exposure limits per IEC 62471 Photobiological Safety for Lamps and Lamp Systems standard and American Conference of American Hygienists (ACGIH®) TLVs® guidelines.

Disinfection Light Source: 365nm UVA light emitted is invisible to the human eye and does not impact CCT or CRI.

Light Control: Fixture LED white light source may be controlled by wired or wireless controls and is dimmable to 1%. The UVA disinfection lightsource has a fixed output and operates continuously on a separate circuit.

Real Time Continuous Disinfection for Occupied High Traffic Spaces



What do healthcare, education, work, and leisure facilities all have in common? They are all high traffic spaces where potential exposure to bacteria is heightened, requiring frequent cleaning and disinfection. In combination with commonplace cleaning methods, Viscor's luminaires integrated with 365DisInFx™ UVA Technology add a layer of protection for occupants. Our lighting solutions work 24/7 to disinfect spaces without the need for additional operational personnel or complicated control systems.



Compliant

Meets IEC 62471 Photobiological Safety for Lamps and Lamp Systems standard and American Conference of Governmental Industrial Hygienists (ACGIH®) TLVs® for human exposure to UV.



Continuous

Flexible LED solutions for 24-hour occupancy providing an added layer of protection along with masks, hygiene, and social distancing.

24-hour UV dosage designed to operate below human health exposure limits of IEC 62471 Photobiological Safety for Lamps and Lamp Systems standard and American Conference of Governmental Industrial Hygienists (ACGIH®).



Test Driven

Third party testing substantiates claims and validates predictive models. Continuous testing is underway to verify effectiveness against additional pathogens.**

**See "UVA Testing, Lab Results, Notes and Citations" for supporting detail



Invisible

Disinfect at night without visual disruption in bathrooms, patient care areas, commercial spaces. In contrast, visible light disinfection can disturb sleep (it's very visible).

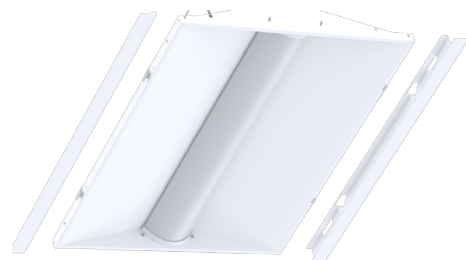
LRTH-DFX

The Visioneering LRTH-DFX Series provides the modern styling and high visual comfort of our standard LRTH. The LRTH-DFX combines a single shallow semiround lens and 365DisInFx™ UVA technology. This IC-rated luminaire's low-profile makes it ideal for shallow or obstructed plenum applications.



LRK-TRH-DFX Retrofit Kit

The LRK-TRH-DFX is a low-profile LED retrofit kit that combines a single shallow semi-round lens and 365DisInFx™ UVA technology. This retrofit kit is ideal for renovating fluorescent troffers and parabolic luminaires and provides modern styling and increased visual comfort.



LCOM-DFX

The Visioneering LCOM-DFX Series is a low-profile linear LED luminaire designed for efficacious illumination of general commercial spaces. It features a captive semi-round acrylic lens and a tapered body for modern styling.



LRTH-DFX LRK-TRH-DFX LCOM-DFX				
Size	White LED			UV Watts
	Nominal Lumens	Delivered Lumens	Watts	
1x4	3200	3200	26	30
	4000	4000	33	30
	5000	5040	44	30
2x2 24	2000	2040	16	15
	3200	3010	25	15
2x4 48	3200	3200	26	30
	4000	4000	33	30
	5000	5040	44	30
	6000	6020	54	30

Approvals:



Applications:

- Office Areas
- Classrooms
- Waiting Rooms
- Retail Stores
- Nursing Homes
- And more...
- Hospitals
- Fitness Centers

Visioneering's DFX series combine the classic designs of popular Visioneering fixtures and 365DisInFx™ UVA technology to help in the inactivation of surface bacteria where people are present and conventional lighting is needed. These antimicrobial solutions continuously disinfect occupied spaces without interruption.

Make an Informed Decision

- UV radiation can pose a risk of personal injury. Overexposure can result in damage to eyes and bare skin. To reduce risk of any potential overexposure, equipment must be installed in accordance with site planning and application recommendations.
- UV solutions are intended for common high traffic spaces and not recommended for dwellings or home use.
- Installation of the devices should be performed by qualified professionals as detailed in Leviton's installation guide.
- To allow for occupancy, 365DisInFx™ UVA products comply with IEC 62471 Photobiological Safety for Lamps and Lamp Systems standard and American Conference of American Hygienists (ACGIH®) TLVs®.
- UV products are meant to be used in conjunction with other protective measures like manual cleaning and the use of proper PPE. They are not a substitute for other measures.
- 365DisInFx™ UVA products are not intended to be used as a medical device.
- When combining two or more UV solutions, regardless of the manufacturer, please consult a trained product application representative to ensure the total irradiance (UV dose) does not exceed recommended human exposure limits. To the extent UV solutions are combined, it may affect the deactivation rates. To the extent UV solutions are combined, it may impact inactivation rates.

**UVA Testing & Lab Results

365DisInFx™ UVA disinfection technology was tested using in-vitro methods as described in detail in Citations 1 & 2 (Livingston, Kvam) which **resulted in 99.7% reduction in MRSA on surfaces exposed to 3W/m² of 365nm UVA over a single 8-hour period.** Results of this testing demonstrated **significant reduction over a similar exposure period of certain common pathogens** including MRSA, Staphylococcus aureus, Enterococcus faecalis, Escherichia coli, Acinetobacter baumannii, Pseudomonas aeruginosa, Candida albicans and auris, associated with Hospital Acquired Infections (HAIs). **Photobiological science and mathematical modeling enables us to calculate expected inactivation rates for 24-hour continuous operation of the 365DisInFx™ UVA technology.**

Notes & Citations:

1 Livingston SH, Cadnum JL, Benner KJ, Donskey CJ (2020) Efficacy of an ultraviolet-A lighting system for continuous decontamination of health care-associated pathogens on surfaces. Am. J. Infect. Control 48: 337-339. <https://doi.org/10.1016/j.ajic.2019.08.003>

- Inoculated steel disk carriers, modification of ASTM E-2197-02
- Using a benchtop device that delivered the 3W/m² irradiance.

2 Kvam E, Benner K (2017) Disinfection via LED Lighting: summary of mechanism and results for 365nm-mediated inactivation of microbes. GE Global Research Technical Information Series 2017GRC0545, GE Confidential (Class 3) Kvam E, Benner K. Mechanistic insights into UV-A mediated bacterial disinfection via endogenous photosensitizers. Journal of Photochemistry and Photobiology B: Biology. 2020;209:111899. doi:10.1016/j.jphotobiol.2020.111899.

- Aqueous cultures were diluted in sterile water and dried onto hydrophilic glass slides.
- Using a benchtop device that delivered the 3W/m² irradiance.

"365DisInFx" is a trademark of Current Lighting Solutions, LLC. Used with permission.



Viscor Inc.

35 Oak St., Toronto, ON M9N 1A1

tel 416-245-7991 **fax** 416-245-4778

customer service line (8:30AM-5:00PM EST Monday-Friday)

Visit our website at: www.viscor.com

© 2021 Leviton Manufacturing Co. Inc. All rights reserved. Subject to change without notice.

V2021A