



EASTERN
TABLETOP



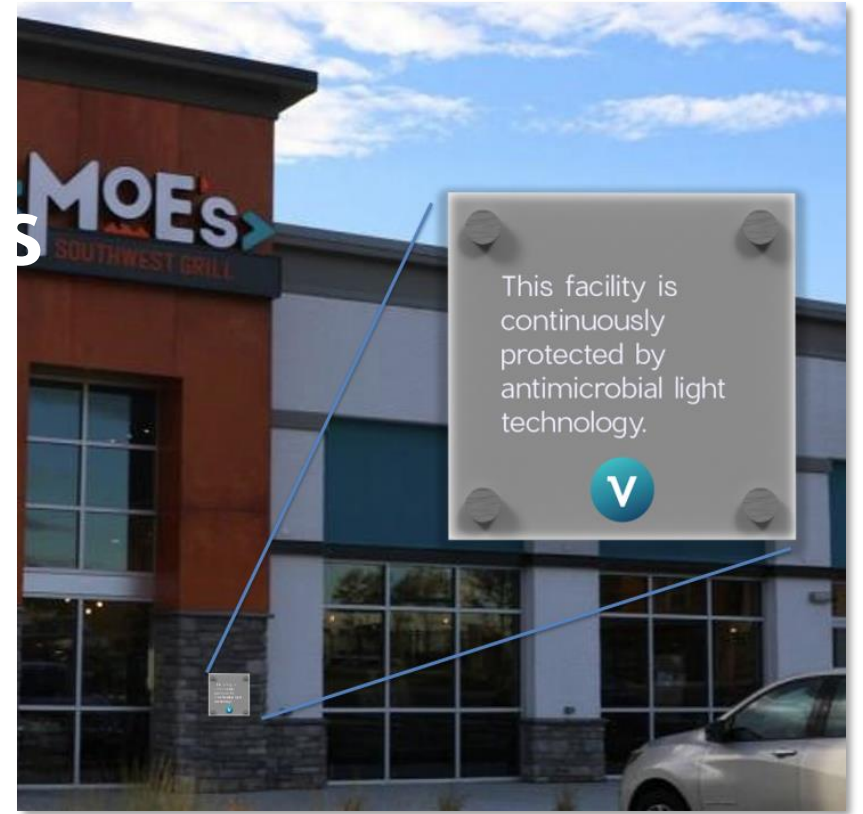
CleanOhr™
Continuous Cleaning with
Non-UV Antimicrobial Lighting



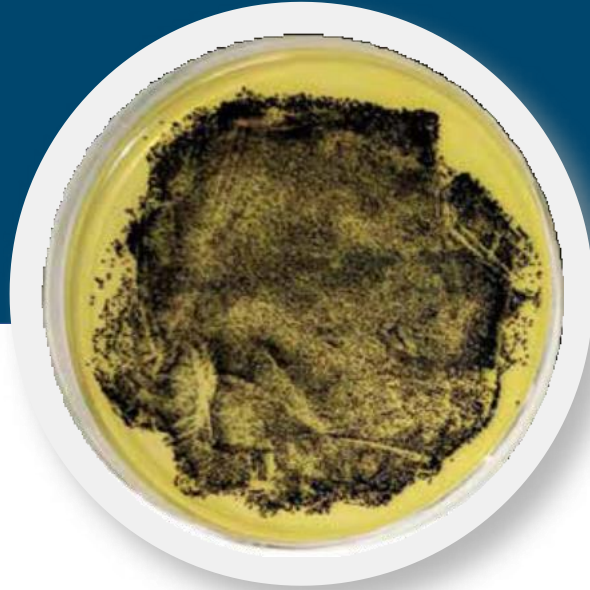
Antimicrobial
Light

vyv™

This space is continually
protected by
**Vyv antimicrobial
non-UV lights**
that stop the growth
of bacteria



Standard Light



Uninterrupted bacterial growth

CleanLite™ Antimicrobial Light



Continuous protection results

**Antimicrobial light continuously protects us
against virus, bacteria, fungi, mold and yeast.**

(Four days growth, no additional incubation)

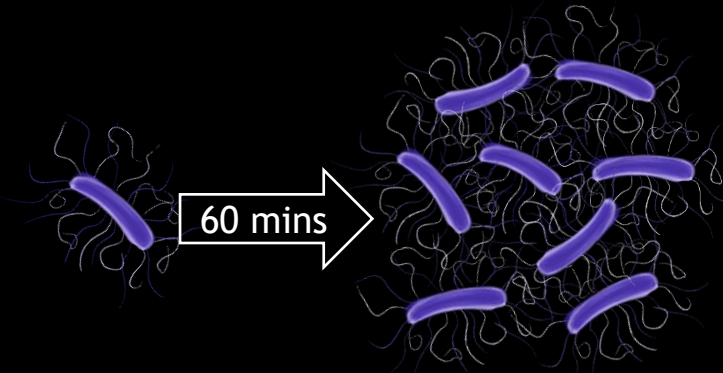
CleanOhr™

EASTERN
TABLETOP

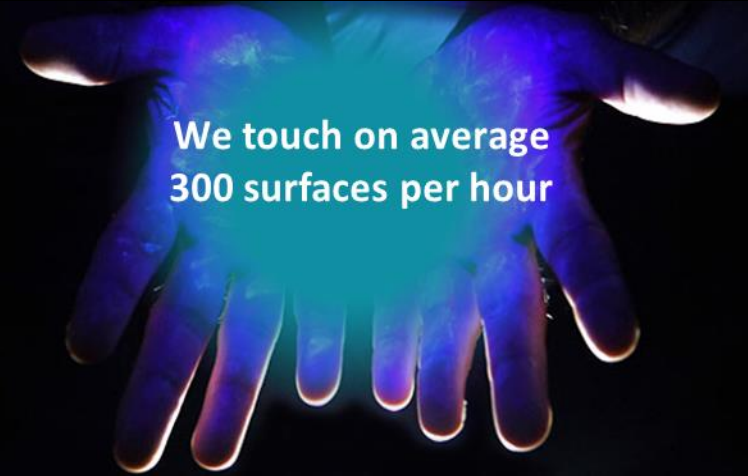
vyv
Antimicrobial
Light

The Lurking Threat: Constant Presence of Germs

Current cleaning options are intermittent and can't keep pace with the rapid growth of germs.



E. coli can divide every 20 mins.
7 hours = 2,097,152 bacteria



We touch on average
300 surfaces per hour

Your desktop contains 400x more germs than the bathroom.

Germs replicate rapidly.

We constantly transmit and contact germs around us.

CleanOhr™

EASTERN
TABLETOP

vyv

Antimicrobial
Light

Tested. Approved. Independent Research on 405nm

Inactivation of Bacterial Pathogens following Exposure to Light from a 405-Nanometer Light-Emitting Diode Array[∇]

Michelle Maclean,* Scott J. MacGregor, John G. Anderson, and Gerry Woolsey

The Robertson Trust Laboratory for Electronic Sterilisation Technologies, University of Strathclyde, 204 George Street, Glasgow, Scotland

Continuous room decontamination technologies

David J. Weber MD, MPH^{a,b,*}, William A. Rutala PhD, MPH^b, Emily E. Sickbert-Bennett MS, PhD^{a,b}, Hajime Kanamori MD, PhD, MPH^c, Deverick Anderson MD, MPH^d, CDC Prevention Epicenters Program



High-Intensity 405 nm Light Inactivation of *Listeria monocytogenes*

Endarko Endarko, Michelle Maclean*, Igor V. Timoshkin, Scott J. MacGregor and John G. Anderson

Blue Light Rescues Mice from Potentially Fatal *Pseudomonas aeruginosa* Burn Infection: Efficacy, Safety, and Mechanism of Action

Tianhong Dai,^{a,b} Asheesh Gupta,^{a,b,c} Ying-Ying Huang,^{a,b,d} Rui Yin,^{a,b,e} Clinton K. Murray,^f Mark S. Vrahas,^g Margaret E. Sherwood,^a George P. Tegos,^{a,b,h} Michael R. Hamblin^{a,b,i}

Blue light for infectious diseases: *Propionibacterium acnes*, *Helicobacter pylori*, and beyond?

Tianhong Dai^{a,b}, Asheesh Gupta^{a,b,c}, Clinton K. Murray^d, Mark S. Vrahas^e, George P. Tegos^{a,b,f}, Michael R. Hamblin^{a,b,g,*}

Inactivation of *Mycobacterium smegmatis* Following Exposure to 405-Nanometer Light From a Supraluminous Diode Array

J. Stephen Guffey, PT, EdD; William Payne, MS, ASCP(MT); Leslie James, BS; Zhuoyuan Qian, BS | Wounds. 2013;25(5):131-135.

Photoinactivation of Bacteria Attached to Glass and Acrylic Surfaces by 405 nm Light:

Potential Application for Biofilm Decontamination

Optimization of the Antimicrobial Effect of Blue Light on Methicillin-Resistant *Staphylococcus aureus* (MRSA) *In Vitro*

[Violet V. Bumah](#), PhD,¹ [Daniela S. Masson-Meyers](#), PhD,¹ [Susan Cashin](#), PhD,¹ and [Chukuka S. Enwemeka](#), PhD^{1,2,*}



Vyv 405nm Technology: Validated. Proven Results

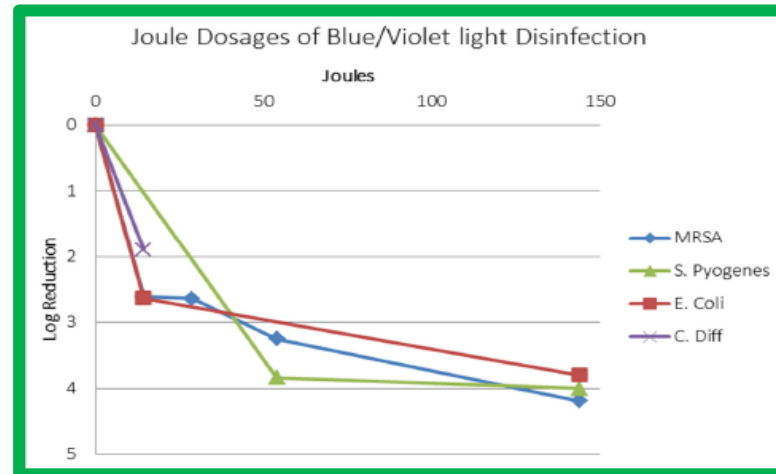
Gram Positive Bacteria

Staphylococcus aureus (incl. MRSA)
Staphylococcus epidermidis
Staphylococcus hyicus
Clostridium perfringens
Clostridium difficile
Enterococcus faecalis (inc. VRE)
Streptococcus pyogenes
Streptococcus thermophilus
Lactobacillus plantarum
Lactobacillus brevis
Listeria monocytogenes
Bacillus cereus
Mycobacterium terrae

Bacterial Endospores

Bacillus cereus
Clostridium difficile

“90%-99% reduction in 24 hours depending on the organism and conditions.”



Gram Negative Bacteria

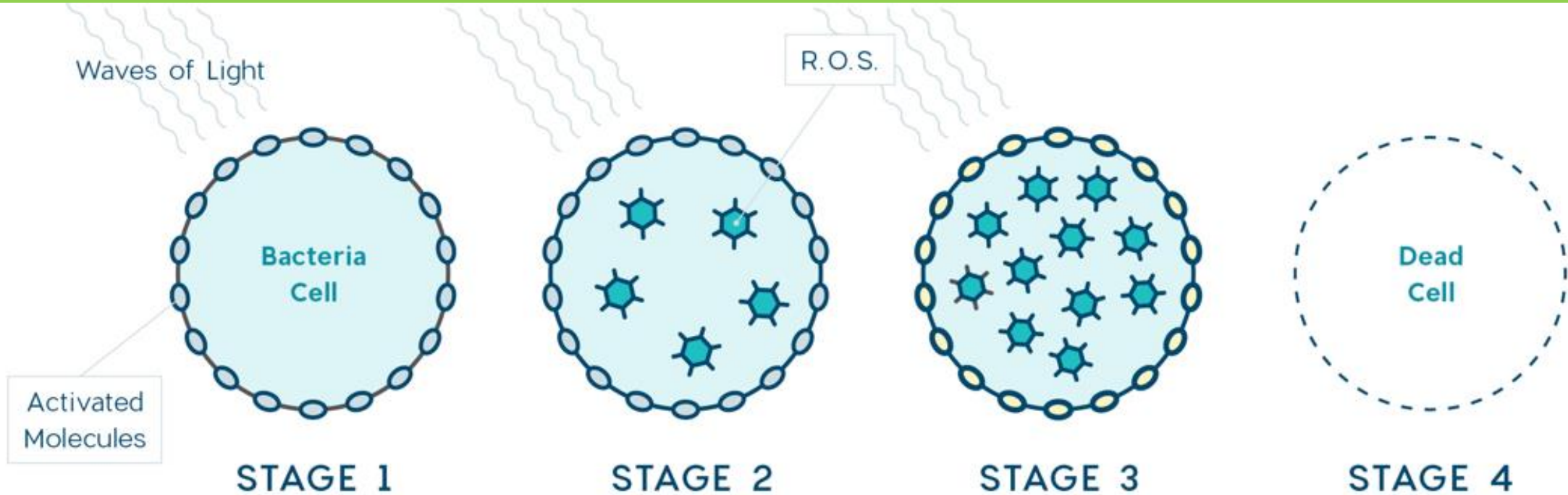
Acinetobacter baumannii (incl. MDRA)
Pseudomonas aeruginosa
Klebsiella pneumoniae
Proteus vulgaris
Enterobacter aerogenes
Escherichia coli
Salmonella enteritidis
Salmonella typhimurium
Shigella sonnei
Serratia spp. (inc. *S. marcescens*)

Yeast and Filamentous Fungi

Aspergillus niger
Candida albicans
Saccharomyces cerevisiae

Harmful to Bacteria. For Use Around Humans.

Visible non-UV antimicrobial light excites porphyrin molecules exclusively in microorganisms, creating excessively toxic Reactive Oxygen Species (ROS).



Not conducive to resistance development, minimizing the potential for cell mutations.*

*Source: J Hosp Infect. 2014 Sep;88(1):1-11. doi: 10.1016/j.jhin.2014.06.004. Epub 2014 Jul 3.



Germ Warfare... Choose the option the fits your application



Commercial Kitchen

Portable



Buffet

Self
Standing

Overhead
Ceiling
Fixture

Commercial Kitchen

Pendant



CleanOhr™

EASTERN
TABLETOP

vyv

Antimicrobial
Light

Simulation Report

Lighting Schedule

Room	Part No.	Description	Quantity	Unit Watts
Space	VVLB-24-80-40-W	Vyv Lightbar 24"	3	10.7W

Statistics

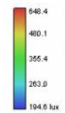
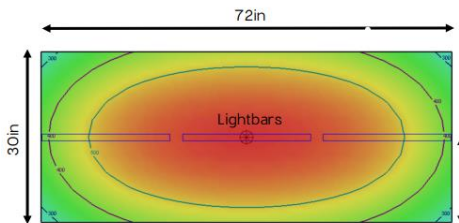
Description	Avg.	Max.	Min.
Counter 72" Length	483 lux	648 lux	271 lux

Contours

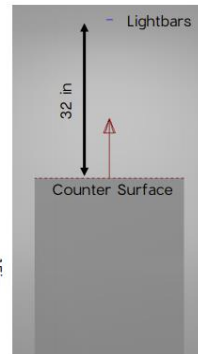
- 300 lux
- 400 lux
- 500 lux

Results

Antimicrobial intensity and coverage is sufficient for the 72" length Buffet Counter.



TOP VIEW

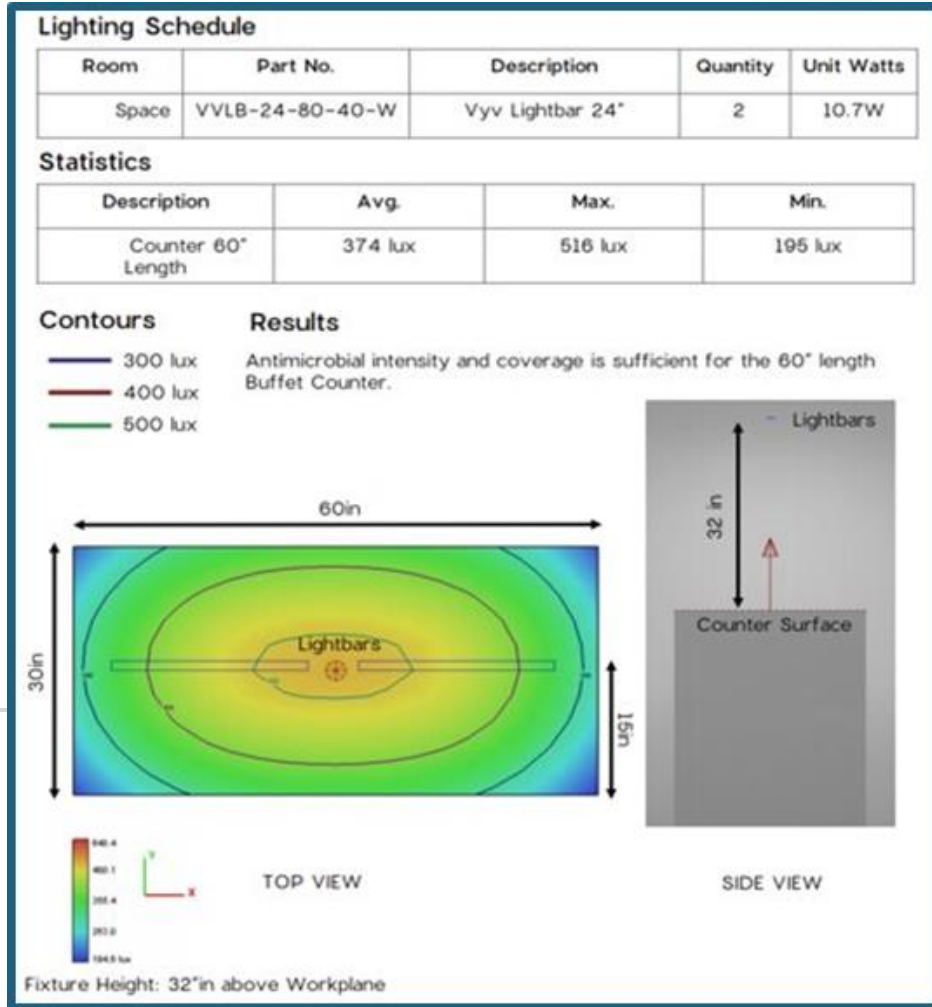


SIDE VIEW

Fixture Height: 32" in above Workplane



Portable Self Standing Unit



Simulation Report



Making the Invisible, Visible.



Vyv's Antimicrobial+Light Mode



Vyv's Enhanced Antimicrobial Mode

EASTERN TABLETOP Portable Self Standing Unit

Buffet Space	VVLB-24-80-40-W	Vyv Lightbar 24"	2	10.7W
--------------	-----------------	------------------	---	-------

Statistics

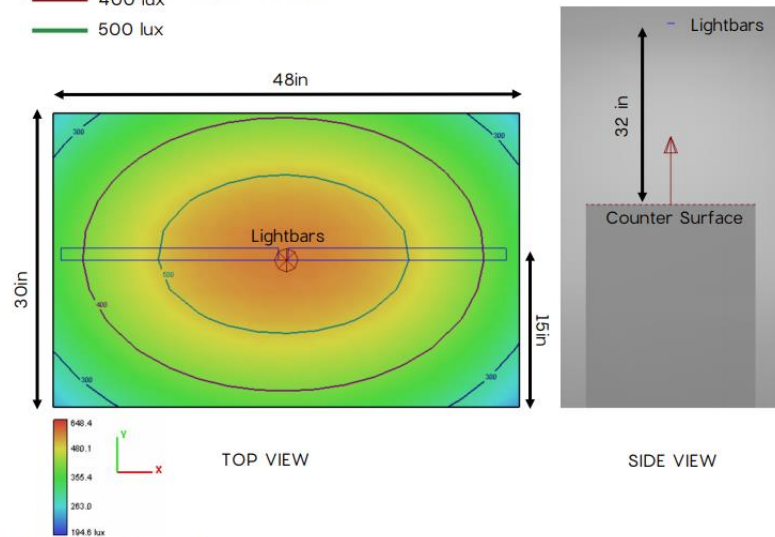
Description	Avg.	Max.	Min.
Buffet Counter 48" Length	415 lux	568 lux	237 lux

Contours

- 300 lux
- 400 lux
- 500 lux

Results

Antimicrobial intensity and coverage is sufficient for the 48" length Buffet Counter.



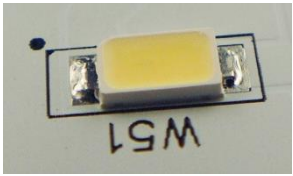
Fixture Height: 32" above Workplane

- ✓ Continuous Cleaning
- ✓ Germicidal Capability
- ✓ 99.9% effective
- ✓ No Maintenance Required
- ✓ Environmentally Safe

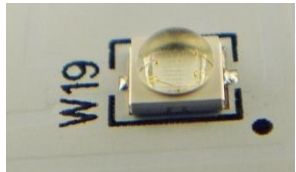


Where You Need It Flexible Integration into Many Creative Applications

Vital Vio Proprietary LED Core Antimicrobial Technology



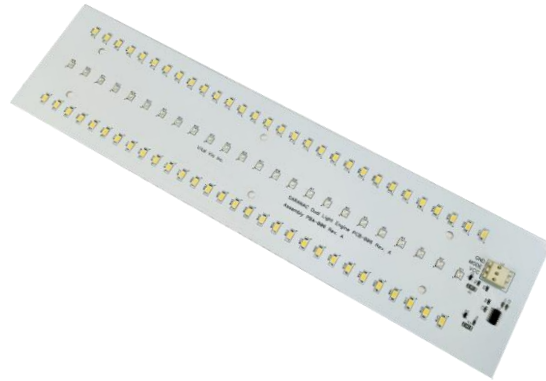
White Antimicrobial+Light



Violet Enhanced Antimicrobial



Vital Vio LED Module PCBA Populated with VV LEDs



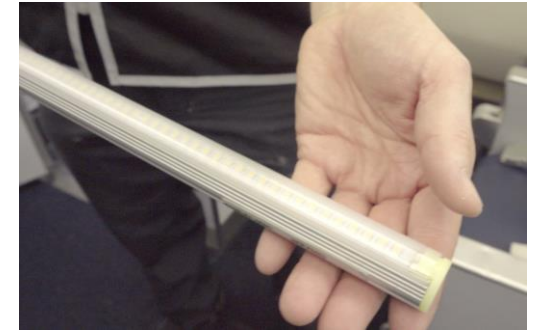
Designed to be
custom sized/ designed
for any application



Fixture/Product Integration Integrated with LED Module



Overhead Troffer Fixture



Linear Airplane
Lavatory Fixture

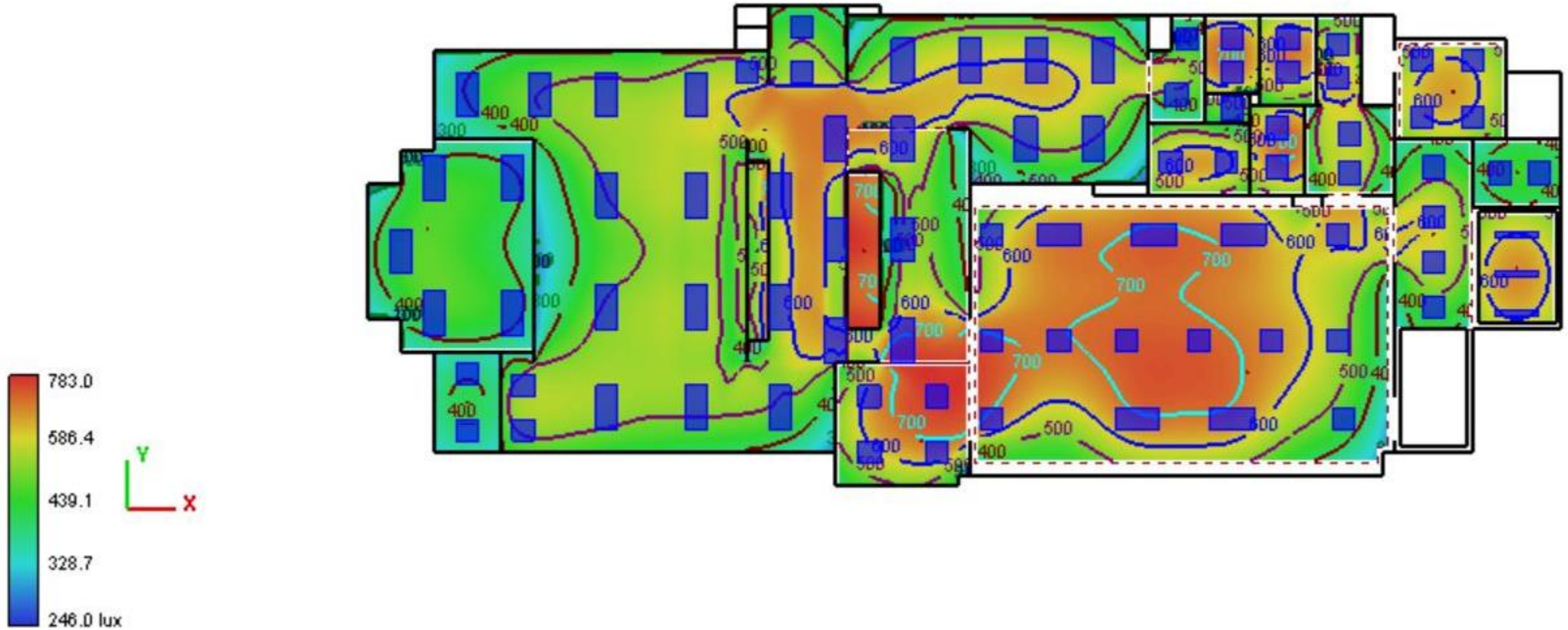


Embedded
Buttons



Embedded Handrail

Simulated Solution



Continuous & Unrestricted Use



Vyv technology and products have been tested to the international IEC photobiological standard and meet the exempt category for continuous and unrestricted use around humans.

(IEC 62471)

The International Electrotechnical Commission is an international standards organization that prepares and publishes international standards for all electrical, electronic and related technologies - collectively known as "electrotechnology".



Advantages of Vyv's Technology

	Vital Vio	Chemical Solutions & Wipes	Chemical Vapors	Pulsed UV
Germicidal Capability	✓	✓	✓	✓
Continuous Protection	✓			
Continuous Use	✓			
No Material Degradation	✓			
No Labor Required	✓			
Cost Effective	✓	✓		
Sustainable	✓			



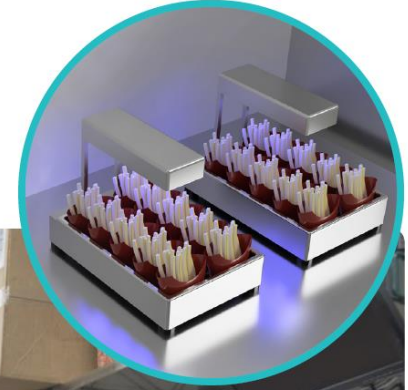
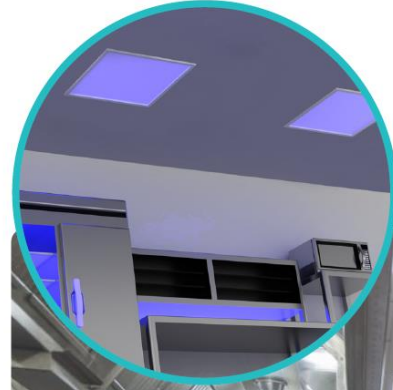
CleanOhr™

EASTERN
TABLETOP

Commercial Kitchen
Light Disinfection
Opportunities

Overhead Lighting

Food Holding Areas



PATENT PENDING

PATENT PENDING



High Contact Surfaces

Hot & Cold Storage

Work/Prep Areas

Leading the Way with Vyv Antimicrobial Light





CleanOhr™

EASTERN
TABLETOP



CleanOhr™
Continuous Cleaning with
Non-UV Antimicrobial Lighting



Antimicrobial
Light