

CODE 3®

ANTIMICROBIAL LIGHT

powered by **vital vio**



CODE3ESG.COM

ALWAYS ON ALWAYS PROTECTED



ANTIMICROBIAL LIGHT PREVENTS* BACTERIA AND ILLUMINATES COMPARTMENT

Maintaining a clean ambulance is critical to keep the most vulnerable patients safe in emergency situations. Each time someone enters the ambulance, new bacteria is introduced and builds up over time, leading to potential contamination. As Emergency Medical Technicians focus on saving lives and traveling to the next emergency, the patient compartment area of the ambulance may not be entirely disinfected between each call. Routine cleaning may not even rid high-touch surfaces of bacteria and other pathogens.

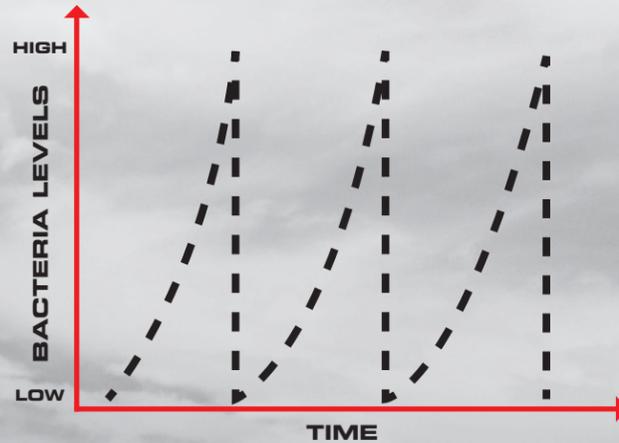
Current terminal cleaning methods are found to be inefficient and may not eliminate bacteria build-up on surfaces. These areas require constant attention to minimize contamination and reduce exposure to bacteria. Code 3's Antimicrobial Light powered by Vital Vio's advanced technology provides continuous prevention of bacterial growth on equipment and surfaces, while providing illumination with its precisely engineered wavelengths of visible light.

Continuous antimicrobial protection is possible. During and in-between calls, or even back at the station, the Vital Vio-powered Antimicrobial Light is continuously working to reduce bacteria wherever its light touches. According to the Centers for Disease Control and Prevention (CDC), antibiotic-resistant bacteria infections are associated with two million illnesses and 23,000 deaths in the United States each year.

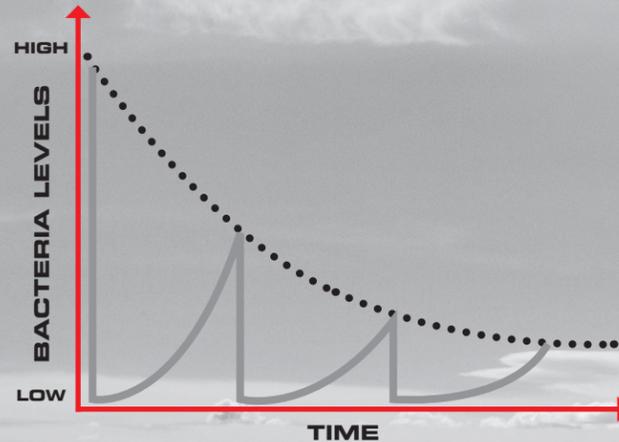
Bacteria lives on surfaces for days, weeks and even months. Routine and spot cleaning with traditional methods are not enough to minimize the risk, especially throughout the course of a typical shift. The Antimicrobial Light delivers a useful light that prevents bacteria or microbes from growing.

***90% reduction of p. aeruginosa and MRSA under controlled laboratory conditions after 24 hours of continuous operation.**

INTERMITTENT CLEANING ONLY



INTERMITTENT CLEANING AND CODE 3'S ANTIMICROBIAL LIGHT



SAFE AND CERTIFIED

Code 3's Antimicrobial Light, powered by Vital Vio, can be used around humans and animals. The technology meets international standards (IEC 62471), which allows for continuous and unrestricted use. The light output falls within the visible light spectrum as opposed to ultraviolet light, which causes adverse effects in humans after prolonged exposure.



12-24V | 1.5A
0.5" D x 9" Diameter

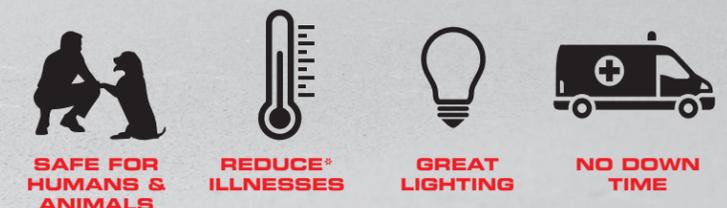
MODEL	LEDS	CONNECTOR	ILLUMINATION
PCL-LED-VV	48	Bare Leads	<input type="checkbox"/>
PCL-LED-VV-P	48	Deutsch	<input type="checkbox"/>

USER BENEFITS

- Utilizes proven technology that stunts bacteria growth and breaks down microbes on high-touch surfaces in interior environments
- Eliminates downtime for routine cleaning as opposed to other disinfecting methods such as using ultraviolet radiation
- Provides effective white lighting that delivers consistent and reliable illumination throughout the service life of the emergency vehicle
- Easily installs and integrates with existing overhead fixtures; compliant with Triple-K protocols

VEHICLE USAGE

- Emergency medical services (EMS) vehicles
- Search and rescue vehicles
- Police vehicles
- Military vehicles
- Coroner vehicles
- Prisoner transport vans
- Crime scene vehicles



SAFE FOR
HUMANS &
ANIMALS

REDUCE*
ILLNESSES

GREAT
LIGHTING

NO DOWN
TIME

HOW DOES IT WORK?



THE SCIENCE

Antimicrobial Lights provide surface protection and deliver quality light to illuminate any workspace in emergency response vehicles. The devices operate within a spectrum of visible light that prevents bacterial growth and creates an inhospitable environment for microbes by photo-activating porphyrin molecules found in bacteria, yeast and fungi. This photo-activation process produces reactive oxygen species (ROS), which are specifically toxic to these organisms. In high doses, ROS causes irreparable damage to their cellular structure, which leads to total breakdown. These activated molecules are unique to bacteria, yeast and fungi cells, which are not found in human or animal cells.

SAFETY TESTING

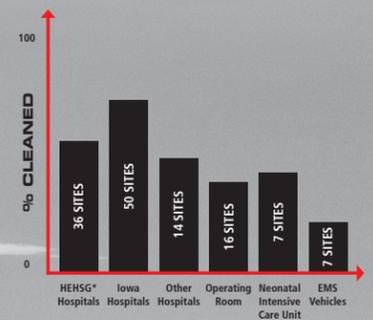
Vital Vio's technology meets all criteria for the IEC 62471 photobiological test and falls into the exempt group (RG 0), "where no optical hazard is considered reasonably foreseeable, even for continuous, unrestricted use." This refers to long-term, continuous exposure to Vital Vio's visible light range. Vital Vio's wavelengths are between 400 to 420 nanometers, which target a specific type of porphyrin molecule that is unique to bacteria, mold and fungi cells. Additionally, the wavelengths Vital Vio's technology emit fall outside the blue light zone that is generally considered harmful after prolonged exposure.

WHAT ARE THE EFFECTS OF BACTERIA PREVENTION?



TERMINAL CLEANING

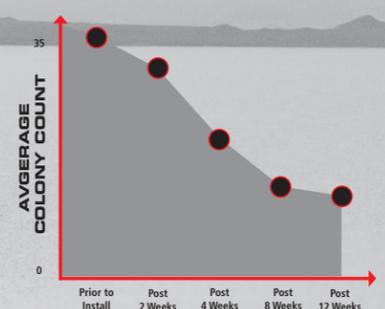
According to the American Journal of Infection Control, extensive studies uniformly confirm that opportunities to improve environmental cleaning exist throughout the healthcare industry. These studies took place in a wide range of health care settings where researchers performed a systematic evaluation using the same fluorescent marking system. Terminal cleaning is the thorough environmental cleaning performed after the area has been used.



*Healthcare Environmental Hygiene Study Group. Varona-Barquin et al. (2013, May). Methods for assessing the adequacy of practice and improving room disinfection. Retrieved from www.ajicjournal.org

CONTINUOUS CLEANING

Vital Vio, a leader in clinical research, has proven the efficacy of their proprietary technology in extensive controlled laboratory testing. One study, conducted in a hospital's active trauma room, showed sample colony counts were statistically significantly lower after Antimicrobial Lights were installed vs. pre-install colony counts. As early as two weeks after installation, the samples collected from the trauma room showed marked reductions in overall bacteria colony counts. In just eight weeks after installation, they recorded statistically significant reductions. All post-install samplings showed lower average colony counts than in all pre-install samplings.



90% REDUCTION OF P.AERUGINOSA AND MRSA UNDER CONTROLLED LABORATORY CONDITIONS AFTER 24 HOURS OF CONTINUOUS OPERATION

ANTIMICROBIAL LIGHT EFFICACY LIST

BACTERIA

GRAM POSITIVE

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

BACTERIA

GRAM NEGATIVE

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

BACTERIA ENDOSPORES

- Bacillus cereus++
- Clostridium difficile+

YEAST & FILAMENTOUS FUNGI

- Aspergillus niger+
- Candida albicans++
- Saccharomyces cerevisiae+

+ Tested on Vital Vio technology under controlled laboratory conditions

++ Tested using 405nm technology by other third party researchers

RESULTS OF EXPOSURE OVER TIME

Vital Vio conducted a study to demonstrate how Code 3's Antimicrobial Lights compared with traditional LED patient compartment lights. Methicillin-resistant staphylococcus aureus (MRSA) were grown, swabbed onto glass slides and allowed to dry. Half the slides were placed under traditional patient compartment lights while half were placed under Code 3's Antimicrobial Lights powered by Vital Vio and they were left exposed for 72 hours

Visually compare the overall bacterial growth below to discover how the disinfecting technology performed during the testing period.



Traditional LED light exposure



Code 3's Antimicrobial Light powered by Vital Vio exposure

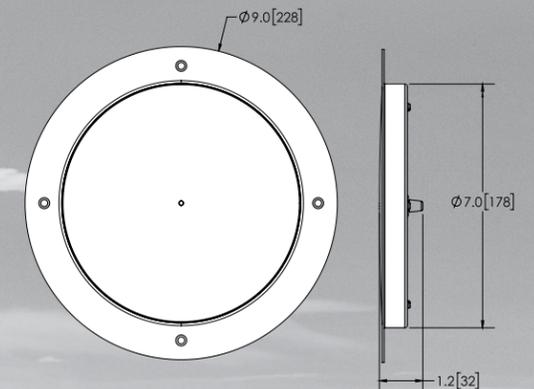
PRODUCT INSTALLATION



The Antimicrobial Light powered by Vital Vio can be easily installed or retrofitted into existing industry standard cutouts.

DESIGN FEATURES

- Features include bright and dim modes, a tough polycarbonate lens and easy installation with a flush-mount design.
- Vital Vio's advanced technology is proven to continuously prevent the growth of bacteria and other microbes on high-touch surfaces in interior environments
- Creates an inhospitable environment for bacteria and microbe growth while providing effective white lighting for use around people and animals
- Fits in a standard 7.0" cutout
- For optimal antimicrobial capability, replace all compartment lighting fixtures with Antimicrobial Light devices



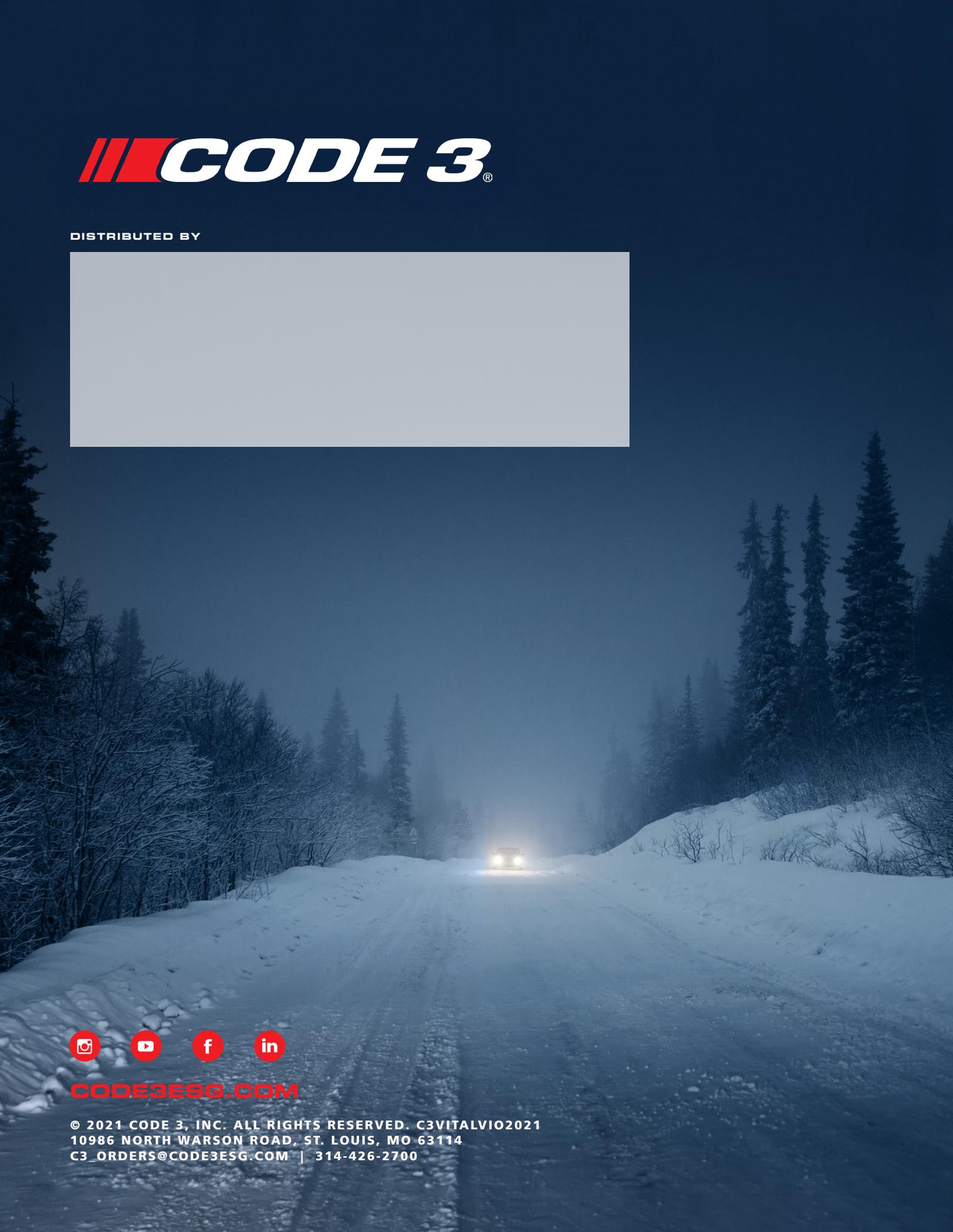
SPECIFICATIONS

- 0.5" D x 9" Diameter
- Effective lumens: 750 bright mode and 250 dim mode
- 12-24V
- KKK-A-1822F certified and AMD compliant
- Internationally certified by IEC
- 5 year, no-hassle warranty

These lights are designed for overhead installation in active, interior environments. Vital Vio's technology reduces the growth of bacteria in every area that it illuminates but may do so at different rates based on time and intensity. Code 3 strongly recommends that all existing patient compartment lights in an ambulance are replaced with Antimicrobial Lights powered by Vital Vio to achieve optimal results. The device output is designed to cover an effective floor-to-ceiling range found in most emergency vehicles (under 12 feet).

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