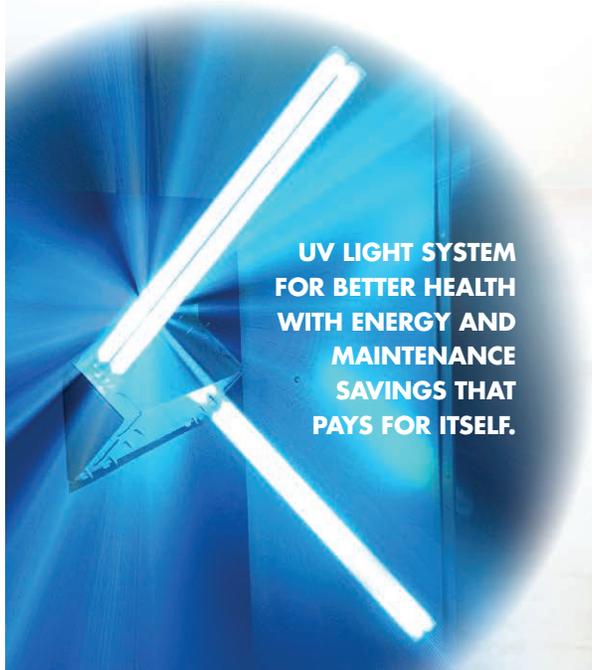


HOMESHIELD™

ULTRA VIOLET LIGHT AIR PURIFICATION SYSTEMS



homeshield™
keeping your indoor environment healthy



UV LIGHT SYSTEM
FOR BETTER HEALTH
WITH ENERGY AND
MAINTENANCE
SAVINGS THAT
PAYS FOR ITSELF.



homeshieldsystems.com

THE SCIENCE

ULTRAVIOLET LIGHT PURIFICATION

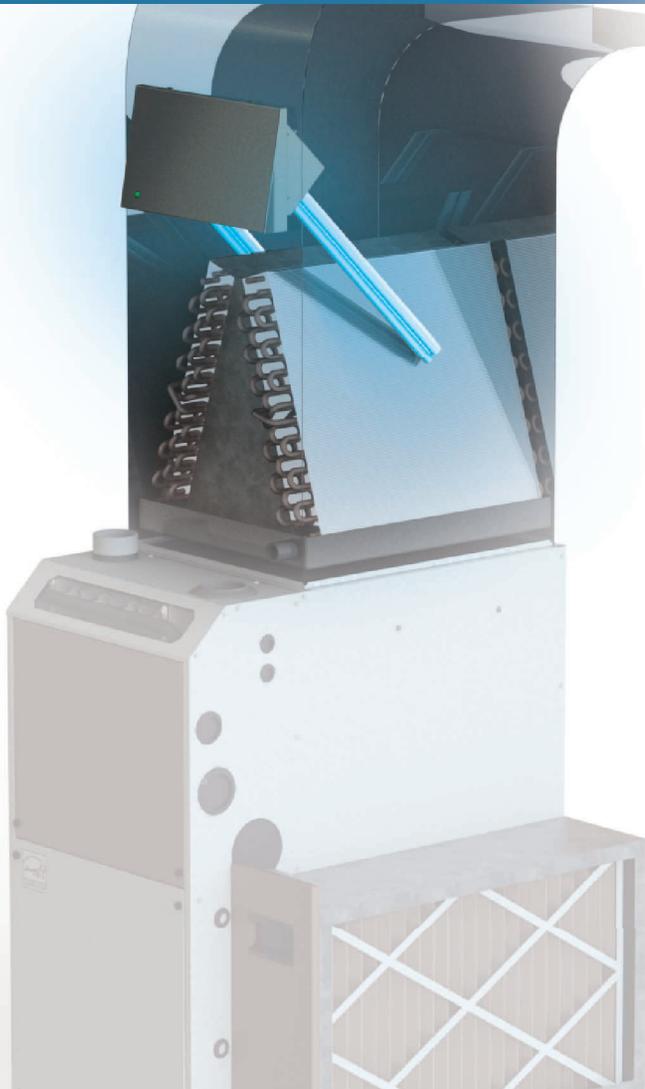
HOW IT WORKS: Microorganisms cannot reproduce when properly exposed to Ultraviolet Light. Homeshield™ targets these multiple groups of harmful microorganisms DNA - en masse - and repeatedly removes the microorganisms ability to reproduce. You will immediately benefit from the positive health effects of a non-contaminated indoor environment.

Ultraviolet light is electromagnetic energy - same as visible light. The frequency of UV wavelengths resides below that of visible light - with the UV-C range light emitting in the germicidal range. The Homeshield™ UV purification system is able to physically alter microorganisms through sterilization, stopping the spread and propagation of harmful viruses, molds, pet dander, bacteria, and allergens your home.



HOMESHIELD™ UV PURIFICATION PROVIDES A POWERFUL SOLUTION FOR HEALTH PROTECTION WHILE BEING COST-EFFECTIVE IN HVAC EFFICIENCY.

THE HEALTH BENEFITS



PROTECTS AGAINST:

VIRAL PATHOGENS
MOLDS
BACTERIA
ALLERGENS
POLLEN
RISK OF INFECTION
INDOOR CONTAMINANTS



NO COMPROMISE MEDICAL GRADE UV TECHNOLOGY

Protect your loved ones from the harmful effects of indoor contaminants. Universal for any ducted furnace or AC system. Homeshield™ Ultraviolet Purification System is an economical and powerful solution to eliminating a microorganism's effectiveness in creating illness.

SENIORS, CHILDREN, THOSE WITH HEALTH CONCERN

AND THE ENTIRE FAMILY... Can benefit from effective and safe UV treated indoor air. Indoor contaminants such as dust particles, mold spores, animal hair, dander, pollen, dust mites, viruses and bacteria rob millions of people from greater health everyday.

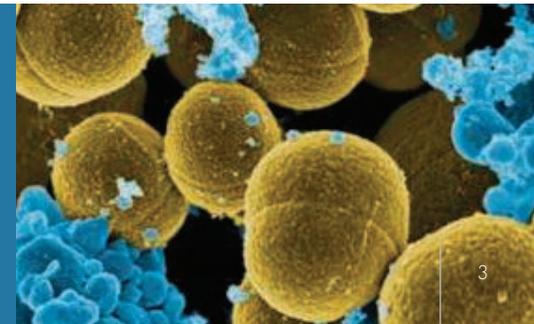
MEDICAL GRADE EFFECTIVE • INTERCEPTS AIRBORNE PATHOGENS

STERILIZES SYSTEM COMPONENTS • CHEMICAL-FREE DISINFECTION

IMPROVES INDOOR AIR QUALITY • HALTS "GROWTH" BUILD UP FROM RETURNING

VIRAL PATHOGENS

UV light prevents viruses from reproducing by damaging the microorganisms nucleic acids. Influenza, tuberculosis, chicken pox, shingles and E.coli are among a group of diseases that can be airborne and often carried via smaller dust particles in the HVAC system.



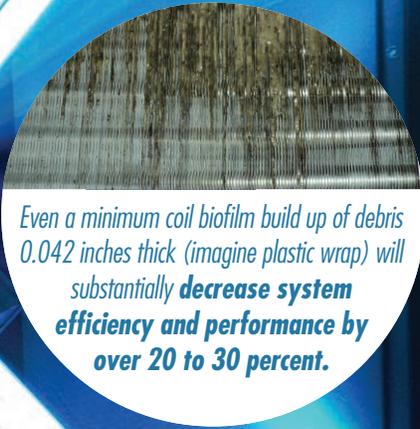
THE ECONOMIC BENEFITS

Increase system performance by purifying your HVAC system and AC coil. Homeshield™ UV uses a medical grade ultra violet light system - for maximum exposure.

Homeshield™ UV uses medical grade Phillips® UV Bulbs with flexible install configurations to purify your home's indoor environment. Cheap low grade bulbs with ineffective range and/or illogical install configurations can not solve a indoor contaminant problem. With Homeshield™ UV all integral HVAC system components will perform more efficiently by halting growth buildup. Now you can stop the inherent health dangers of indoor air contaminants and pollution with a system that pays for itself.

The Homeshield™ UV high output system targets the AC coil - the largest source of mold, microbial and endotoxin concentrations within the ventilation system.

There is a complex yet direct relationship between bionesting, debris and efficiency of the system. The AC evaporative coil is the biggest HVAC bionesting source and is a central cause of wasted energy. Dark and damp conditions provide prime opportunity for propagation of thousands of mold colonies, making the AC coil the largest source of indoor mold contaminates. Coil molds are also part of a bacterial "slime". This biofilm comprising of mold and yeasts, typically grow on the coils of the unit. **It is estimated that molds are the primary cause of 80 percent of allergies and asthma.**



Even a minimum coil biofilm build up of debris 0.042 inches thick (imagine plastic wrap) will substantially **decrease system efficiency and performance by over 20 to 30 percent.**

COST SAVINGS AT A GLANCE

Less Maintenance • Energy Savings • Installation Ease • Low Output option keeps new AC coil clean • High Output option treats older contaminated AC coil • Increased System Performance • Avoids Costly Illness

THE PRODUCT LINEUP

HIGH OUTPUT - 99%

DUAL HEAD

120 Watt High Output
UV Sterilization System
UVHFS120WB

LOW OUTPUT - 90%

DUAL HEAD

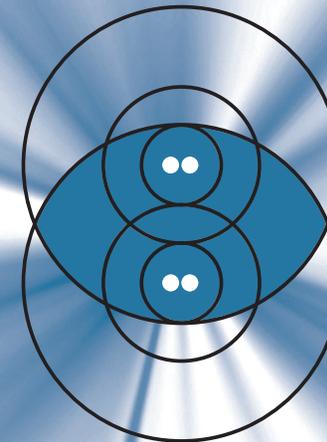
36 Watt Low Output UV Coil
Irradiation System
UVLFS036WB

MODULAR

120 Watt High Output
UV Sterilization System
UVHMS120WB

MODULAR

36 Watt Low Output UV Coil
Irradiation System
UVLMS036WB



Our twin lamp system creates ultra high intensity zones in the areas between the lamps. As the air is recirculated it is treated repeatedly ensuring a strong and effective dose of UV irradiation to any surviving microbes.

PHILIPS is a registered trademark of Koninklijke Philips N.V.

BACTERIUM

Bacteria has become more resistant to antibiotics as chemical disinfectants as antibiotics usage continues to grow. Protozoa, Measles, Eberthelle Typhosa are a few of the avoidable yet very dangerous microbial bacterias; especially to those facing health challenges.



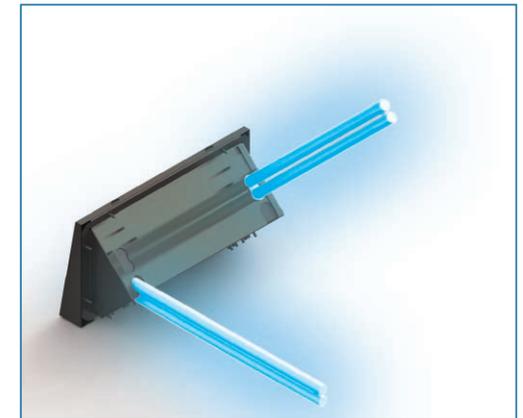
CONFIGURATIONS



homeshield.

FLEXIBLE OPTIONS YOU CAN TRUST

All Homeshield™ UV products are adjustable in the bulb orientation configurations. Our products also contain superior Phillips® medical grade bulbs for contaminant free air and can extend the life and efficiency of your HVAC system and components. The easy-to-install design provides flexible options for your particular HVAC system and needs.



UV-C light purification is a safe and effective solution to maintain and achieve better health.

ALLERGENS

Allergens create a histamine response and histamine causes inflammation. Indoor air pollution can cause allergic reactions resulting in headaches, sinus problems, respiratory illness and increase the severity of existing symptoms such as asthma. Homeshield™ UV light purification is a safe, proactive, and cost effective choice in improving ones health.

IN ACTION



ENTIRE HOME AIR PURIFICATION

This illustration demonstrates an effective and common lamp placement solution. With Homeshield™ lamp end mount designs, the irradiation effectiveness is increased. Targeting the downstream section of the cooling coil in turn keeping the drain pan and coils clean. This setup is ideal as the air handling system is treated with a single ballast before the filter, increasing the overall efficiency in targeting groups of microorganism's ability to reproduce.

INSTALL OPTION FLEXIBILITY FOR NEW OR EXISTING SYSTEM INTEGRATION

Heating • Air Conditioning • Gas Furnaces
Wood Furnaces • Multi Fuel Furnaces • HRV
Electronic Air Cleaning Systems



TRUSTED TECHNOLOGY

Health and food industries have widely adopted the disinfection benefits of UV light technology. A chemical-free means of purification will ensure greater health to your family and addresses sensitive health concerns.

PET DANDER

Dander is microscopic and is transported through the air which can enter the mucous membranes in the lungs and irritate the eyes. Homeshield™ offers the ability for pet owners to stop allergens and odors from proliferating the home environment by producing negative ions - a positive means that cause allergen particles to fall out of the air, resulting in a more effective filtration result.





UV BULB OUTPUT/INTENSITY DATA

ULTRA VIOLET LIGHT EXPOSURE: HOW MUCH ENERGY IS REQUIRED TO STERILIZE HARMFUL BACTERIA / VIRUSES / PATHOGENS

VIRUS	90%	99%	BACTERIA	90%	99%
	LOW OUTPUT	HIGH OUTPUT		LOW OUTPUT	HIGH OUTPUT
Bacteriophage - E. Coli	2,600	6,600	Bacillus anthracis spores - Anthrax spores	24,320	46,200
Infectious Hepatitis	5,800	8,000	Bacillus subtilis	5,800	11,000
Influenza	3,400	6,600	Clostridium tetani	13,000	22,000
Poliovirus - Poliomyelitis	3,150	6,600	Corynebacterium diphtheriae	3,370	6,510
MOLDS			Ebertelia typhosa	2,140	4,100
Aspergillus flavus	60,000	99,000	Leptospiracanicola - infectious Jaundice	3,150	6,000
Aspergillus glaucus	44,000	88,000	Micrococcus sphaeroides	1,000	15,400
Aspergillus niger	132,000	330,000	Mycobacterium tuberculosis	6,200	10,000
Mucor racemosus A	17,000	35,200	Salmonella typhosa - Typhoid fever	2,150	4,100
Mucor racemosus B	17,000	35,200	Salmonella typhimurium	8,000	15,200
Oospora lactis	5,000	11,000	Serratia marcescens	2,420	6,160
Penicillium expansum	13,000	22,000	Shigella dysenteriae - Dysentery	2,200	4,200
Penicillium roqueforti	13,000	26,400	Shigella paradysenteriae	1,680	3,400
Penicillium digitatum	44,000	88,000	Spirillum rubrum	4,400	6,160
Rhizopus nigricans	111,000	220,000	Staphylococcus albus	1,840	5,720
			Vibrio comma - Cholera	3,375	6,500

In some cases contaminants in the system will literally hit the bulbs surface, and can be exposed to as much as 220000 $\mu\text{Ws}/\text{cm}^2$.

Looking at the chart above that is enough energy to tackle the toughest molds – the hardest organisms to sterilize.

In usual operation a particle blast through the system past the lights - A High Output head will provide an absolute minimum dose to the entire air stream of 525 $\mu\text{Ws}/\text{cm}^2$ @2000cfm in a 24.5" plenum, and a maximum dose over 25,000 $\mu\text{Ws}/\text{cm}^2$ @ 600cfm in a single pass. The average UV dosage with the High Output module is 9090 $\mu\text{Ws}/\text{cm}^2$ @ 600 CFM in a 24.5" plenum.

As air circulates in your home and makes multiple passes through the UV lights the more effective the sterilization of the indoor air.



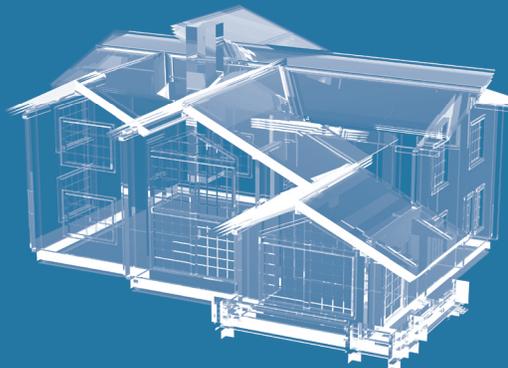
homeshield™

keeping your indoor environment healthy

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Indoor air is more contaminated than ever with up to 7 times more toxins, germs and house dust than fifty years ago. The Science Advisory Board (EPA) ranks indoor air pollution among the top four environmental risks to public health.

- Energy tight buildings trap contaminants indoors with little fresh air relief
- HVAC fan pushes contaminants throughout home
- Modern building material out-gassing
- Higher indoor moisture gives rise to mold and dust-mite growth
- Higher use of cleaning and other chemical products
- Higher indoor microbial growth and debris dissemination
- More concentrated human by-products (hair, dander, dead skin, etc) from increased indoor living
- Higher presence of insect, dust mite and cockroach feces and body parts
- Infesting growth within the HVAC unit (perhaps the largest source of indoor pollutants)