

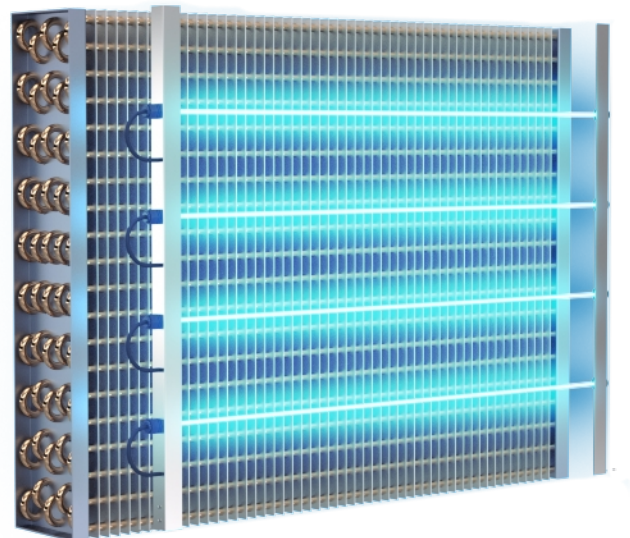
**99.999% KILL RATE
FOR SARS-Cov-2 (Coronavirus)**

AntiVIRUS UVC-HVAC

Ultraviolet HVAC Coil Disinfection System

PHILIPS UV-C TECHNOLOGY

UV-C ultraviolet light energy has long been recognized as one of the most effective methods of controlling airborne and surface contamination by viruses, bacteria, mold spore and other harmful contaminants



ULTRAVIOLET UV-C ENERGY AND RECYCLED HVAC AIR

The World Health Organization recently backed away from its stance that indoor transmission of the SARS-CoV-2 coronavirus was rare and largely confined to medical procedures like administering a ventilator.

Aerosols, particles suspended in a gas and ranging in size, are generated when we're speaking loudly, talking, singing and doing other activities that release particles from our respiratory tract through our mouths. These can then be inhaled by others.

When these particles are released, they can evaporate or be transformed up and away from the body, become airborne and move about an indoor environment for a time period of minutes to hours.

This is the perfect recipe for transmission of the coronavirus if the particles are trapped indoors with poor ventilation in recycled air - such as with most commercial HVAC systems in large buildings. Building occupants are breathing a higher percentage of the same air that other people are exhaling. If someone inside the building is shedding COVID-19, it can build up in the recycled air.

As well as the HVAC system being very efficient at pushing potentially dirty air around a building, it also provides drier air which viruses prefer.

Studies are also showing that genetic material from the SARS-CoV-2 virus (COVID-19) is being discovered inside the HVAC system with the surface of the cooling coil being an excellent growth medium owing to the biofilm that collects on it.

Given Thailand's extreme temperatures and humidity levels, this problem is magnified as outdoor air being mixed with the cool recycled air is generally kept to a minimum for cost savings. Not to mention the risk of PM2.5, which is becoming more of a problem in addition to COVID-19.

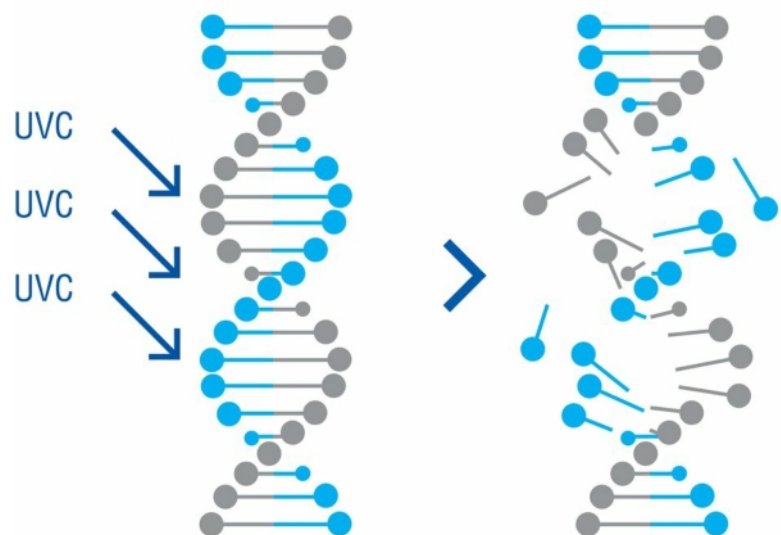
What are the benefits?

Indoor air quality will be improved since the coils that are continuously cleaned by UV-C are thus no longer an incubation site for microorganisms. Air flowing through the coils is not contaminated, resulting in cleaner air being delivered to the building's occupants.

Maintenance benefits may accrue from use of UV-C lights to keep coils continuously clean, avoiding the laborious coil cleaning actions that will otherwise be required to return coils to a clean condition.

Energy benefits are provided by ultraviolet lighting that cleans cooling coils, reducing pressure drop, improving heat transfer and increasing system capacity, resulting in overall cooling energy savings.

HOW DOES UV-C ENERGY WORK?



UV-C band ultraviolet energy, at the wavelength of 254nm, inactivates microorganisms at a molecular level by damaging their DNA structure.

Once the DNA is damaged beyond repair by UV-C, the contaminant becomes harmless and it cannot replicate, thus removing the threat of the virus or bacteria.

UV-C energy's effectiveness has been documented for over a century.



Recycled air in enclosed spaces can contain high levels of viral load- putting everyone in danger

HOW EFFECTIVE IS UV-C AGAINST ORGANISMS GROWING ON THE COOLING COIL?

Recent testing of the systems efficiency was conducted at an international food processing plant.

The result was a 90%+ reduction in fungal and mold growth on the surface of the coil in only 30 days from installation of the system.

Testament to the power and efficiency of UV-C light!



Before UVC

After UVC

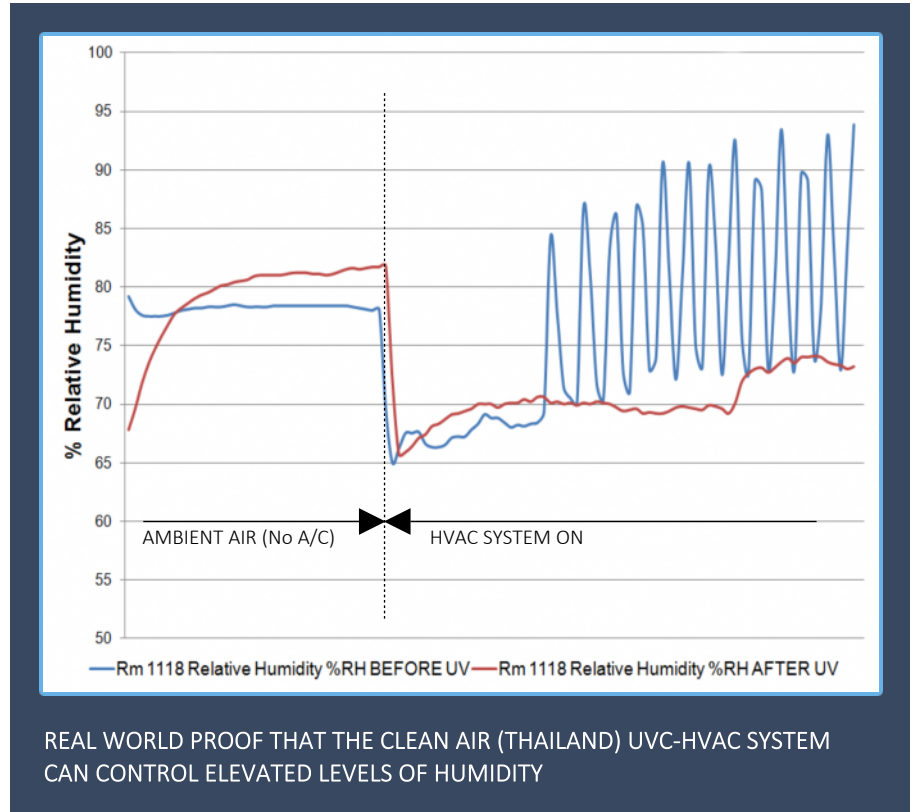
ULTRAVIOLET UV-C ENERGY REDUCES HUMIDITY WHICH HELPS REDUCE THE INFECTION STRENGTH AND VIRAL LOAD

The AntiVIRUS UVC-HVAC system has proved it can dramatically reduce humidity levels quickly after installation.

Now that the cooling coil of a HVAC system is perfectly clean it can perform at its design specifications, allowing greater heat transfer and humidity can be better controlled. This reduces operating costs and makes the indoor air a much more comfortable place to be.

More importantly, when considering the threat of viruses being recycled through a buildings' HVAC system, reduced humidity of <70% can prevent the spread of viruses.

This is achieved by reducing the amount of water droplets (vapour) that viruses can travel upon when attached. Reducing humidity levels also has an effect by concentrating and evaporating the salts in the air, which in turn helps to deactivate viruses present in the air building occupants are breathing.



High levels of humidity- which exist in Thailand- are controlled using the AntiVIRUS UVC-HVAC system

