

## Cookies on Hospitality Net

We use cookies to ensure that we give you the best experience on our website. If you continue to browse the site, we'll assume that you are happy to receive cookies on the Hospitality Net website. To find out more about the cookies we use [click here](#).

CLOSE



Get actionable, real-time updates  
on staff activity



## The germ-free (and worry-free) hotel room of the future enabled by UV LEDs

It's no secret – germs are everywhere in hotel rooms.

By [Robert C. Walker](#), CEO of RayVio

They're on the bathroom counters, in the drinking glasses and even on the television remotes. Hotel guests may bring their own sanitizing wipes and sprays, but at the end of the day, visitors rely on management to provide a clean, comfortable room for them to enjoy. The reality is that these dangers lurking in hotel rooms most often go unnoticed.

According to a study conducted by the University of Houston, television remotes and light switches are hotspots of bacterial activity in hotel rooms. Visitors don't think twice about touching these everyday appliances and therefore expose themselves to unwelcome health hazards. It has also been found that you don't necessarily get what you pay for when it comes to luxury hotel suites – one study found that expensive hotels have more bacterial agents than economy hotel chains. Of the hotel rooms included in this study, the television remotes in the luxury rooms had over eight times as many harmful contaminants as those in more budget-friendly lodgings. Whirlpool tubs, another away-from-home treat that many hotel guests indulge in, are also one of bacteria's favorite hideaways. In one study, Texas A&M microbiologist Dr. Rita Moyes found that 100 percent of water samples taken from hotel whirlpool tubs tested positive for contaminants that can cause rashes, urinary-tract infections and even pneumonia.



The solution? Innovation.

Hotels and commercial businesses around the world are deploying more solutions – the global disinfectant market is expected to reach over \$2.9 billion by 2017. Sales of disinfectant sprays, gels and wipes have grown in recent years – and the market for disinfection solutions keeps growing. Although these products can reduce the germ count on surfaces, existing solutions are limited. They're expensive, generate excessive waste and often include harsh chemicals like bleach. Reusing disinfection wipes that are intended for single-surface use can also lead to nasty cross-contamination – no one wants the same wipe that's cleaning a toilet seat to be cleaning their drinking glasses. The same problem occurs as maids move from room to room with mops and brooms: any bacteria picked up during their rounds are spread across their entire maintenance route.

New technologies are filling these gaps in the market and improving disinfection capabilities. Ultraviolet-C (UV-C) light has been used for disinfection for many years, preventing bacteria from reproducing on surfaces and in water to create a sterile environment. However, many limitations exist that restrict widespread application.

UV-C technologies have usually been powered by mercury-vapor lamps. Although mercury lamps have made traction in delivering industrial disinfection, limitations associated with mercury have prevented the development of a full range of applications. Mercury lamps not only involve the use of toxic material – one of the top ten chemicals of major public health concern according to the World Health Organization – but they are also fragile, bulky and notoriously difficult to use, requiring constant maintenance and frequent replacement.

Rather than vaporizing toxic mercury to generate UV light, UV-C LEDs use semiconductor technology to achieve the same benefits, while completely eliminating the risks associated with mercury-vapor based technologies. UV-C LEDs are not only safer but also power-on instantly. They are also more compact and offer higher power density than mercury vapor lamps, without creating harmful ozone during the disinfection process.

Due to recent advancements, UV-C LED technology is now available in its most powerful form, producing concentrated disinfection power with a device 6.5 millimeters wide. UV-C LED can also be powered by battery and can be integrated into a mobile platform like the white LEDs in the smart phone camera flash. This turns your phone into a handheld UV sanitation wand enabling disinfection on demand and on the go. With the advanced sensing and imaging capability of today's smart phone devices, consumers can measure and calculate the area dosage of UV, and achieve up to 99.9999% disinfection efficacy within 10 seconds on high risk areas such as door knobs, remote controls and utensils. With their short wavelengths and high power density, UV LEDs quickly deactivate the DNA of bacteria, viruses and other pathogens, thereby preventing disease.

The hospitality market holds enormous potential for the deployment of UV-C LEDs, which can be incorporated into a range of products, from self-disinfecting whirlpool tubs and toilet seats to hotel room surface cleaners. Television remotes, alarm clocks and even throw pillows can be disinfected within seconds by inserting the item into a UV-C machine. Coffee maker water tanks could include UV-C LEDs to disinfect areas that are not regularly cleaned. Hot water does not necessarily kill all bacteria – but UV-C does! With the ability to disinfect everything from doorknobs to drinking glasses, UV-C eliminates potentially dangerous bacteria, including germs that cause skin diseases, nasty colds and drug-resistant infections such as MRSA.

The possibilities are endless. Just as microchips sparked a flurry of innovation that generated incredible hardware and devices that most of us never imagined, UV-C LED technologies promise to do the same. UV-C LEDs can help hotels deepen relationships with customers, giving guests around the world peace of mind, strengthening their brand and furthering healthier and more productive experiences.