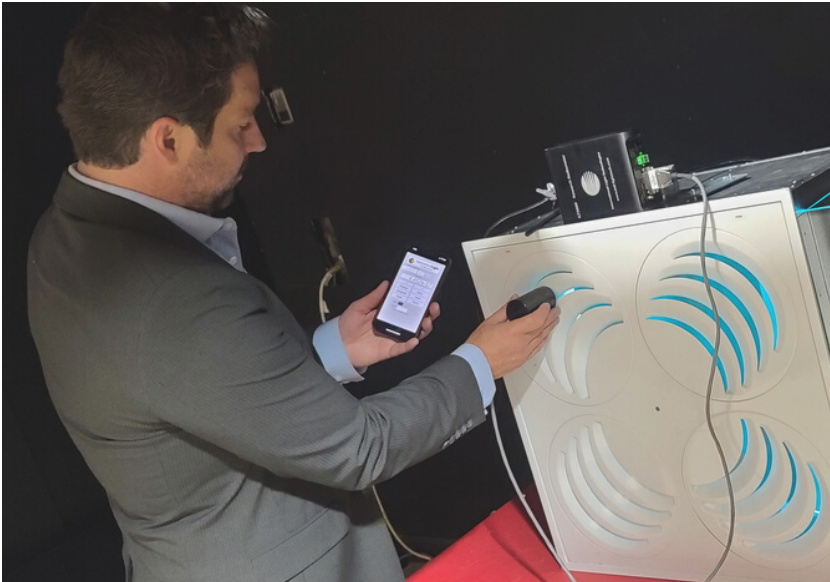


EFFECTIV HVAC: CUSTOMER PROFILE



EffectiV HVAC relies on the ILT5000 as a critical low light UVC germicidal measurement solution



“WE HAVE A UNIQUE APPLICATION AND NEEDED TO ENSURE WE WOULD MEET THE UL8802 STANDARD FOR GERMICIDAL SYSTEMS”



EffectiV HVAC has been designing architectural diffusers for commercial and institutional buildings for almost a decade. EffectiV HVAC combines the functionality of efficient air handling with the aesthetic of architectural design. We spoke with Frank Godbout, President of EffectiV HVAC, and he explained that high-performance air diffusers should provide three things – good indoor air quality, energy efficiency, and thermal comfort. EffectiV HVAC has added a fourth element to that – eye appeal.

While most people don't give much thought to the components of their HVAC system, as Frank explains, “Diffusers are often the weakest link in the chain. Although they make up only a small portion of the cost of a system, they can have a big impact on performance.” Frank continued, “Most commercial diffusers are designed and tested under optimum conditions, but more often than not, actual installation conditions are far from optimal. Occupants end up over heating or over cooling spaces due to the lack of good thermal control with other diffuser systems.”

At EffectiV HVAC they believe that architectural aesthetics do not have to be at odds with functional design. In fact it is the aesthetics of their diffusers that enable them to outperform standard, industrial-style diffusers.

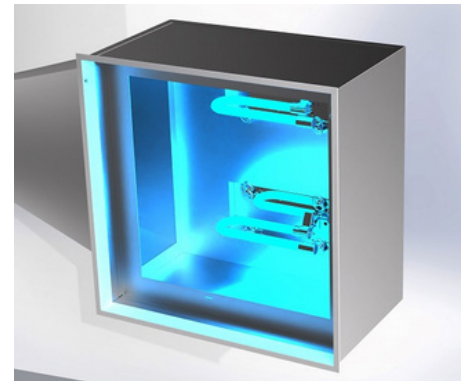


In 2020 when the pandemic hit, EffectiV HVAC saw an opportunity to expand their portfolio to include diffuser systems that offered air purification. Their unique plenum box system controls the velocity of the air flow, enabling them to efficiently irradiate and mix the air. Their signature aesthetic, however, posed a challenge of its own. The mercury lamps used in the plenum box emit a soft blue light. Frank said, "Part of our design called for this light to be visible through the diffuser. This not only serves an aesthetic purpose, it also provides a visual indicator and assurance that the system is working". He continued, "The problem is that in addition to the visible light coming out, there is a concern that UVC light will come out as well." The EffectiV HVAC diffusers incorporate a UV blocking filter, however the effectiveness of this still needed to be tested.

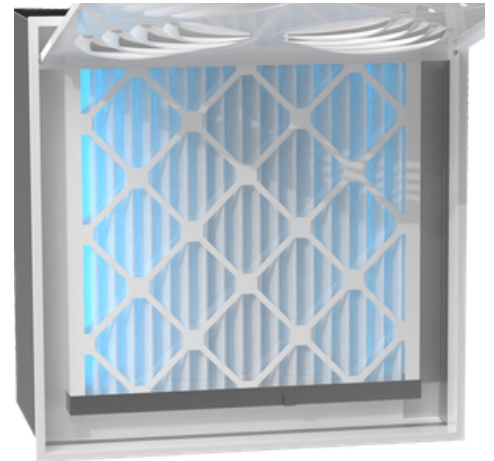
In order to meet the UL8802 standard for germicidal systems, the diffuser needs to emit less than $0.1 \mu\text{m}^2$, within one foot of the diffuser. In order to measure this light, EffectiV first purchased a "cheap" light meter. "We found out quickly that the data was no good," explained Frank. EffectiV next purchased an ILT2400 meter from ILT, but found that meter was still not sensitive enough for the low light levels they were trying to detect. "We kept getting different results from UL so we finally just asked them what system they were using," he continued. As it turned out, the UL lab was using an ILT5000 with the SED240 detector and ACT5/W filter. The ILT5000 meter has a 10 decade dynamic range, and the detector has a weighted response and is specifically designed to measure the germicidal effectiveness of low-intensity, broad spectrum UV sources in accordance with the requirements within the IES Luckiesh and DIN standards. ILT worked with EffectiV HVAC to upgrade their ILT2400 device to the research-grade ILT5000. The ILT5000's broader measurement range allowed them to measure the low light levels of UVC and verify their diffusers were not emitting more than the allowable UVC. For EffectiV HVAC, they learned the weakest link in the R&D chain can be a relatively small component as well. For them purchasing a quality meter ensured their specifications met the requirements for UV hazard.

EffectiV HVAC is headquartered in Quebec, Canada, and has been designing high performance architectural diffusers for almost ten years. You can learn more about their UV diffusers at www.uvdiffusers.com or at www.effectiv-hvac.com.

ILT has been developing and manufacturing light measurement systems since 1965. We offer a broad range of products from configured light meters, radiometers, dataloggers, and spectrometers. Our products have been trusted by researchers, scientists, engineers, students, and the like. Our meters have been used in countless studies, research papers, field and lab tests. Learn more about ILT's light measurement solutions [here](#).



PLENUM BOX WHERE AIR IS PURIFIED



UV BLOCKING FILTER

