



Ultraviolet Lights

For McQuay Air Handler Products

Daikin applied air handling equipment can be specified with factory-installed ultraviolet lights on the downstream side of all cooling coils and above the unit drain pan. Products include:

- RoofPak™ applied rooftop systems
- Vision™ indoor air handlers
- SWP vertical self-contained systems

All ultraviolet lights used in Daikin products are pre-engineered and factory installed for ease of use and proper placement for maximum effectiveness. The ultraviolet lamps irradiate the coil and drain pan surfaces with light in the 254 nanometer wavelength of the light spectrum (UV-C). UV-C light has been proven effective in killing most bacteria, molds and viruses in both laboratory and practical application. The completed package of Daikin equipment and ultraviolet lights includes Intertek Services Inc. (ETL) safety agency certification.

Features

- All Daikin products use lamps that are listed under UL Category Code ABQK specification, HVAC Accessories, Air Duct Mounted.
- High-output, hot cathode lamps produce Ultraviolet Germicidal Irradiation (UVGI) of 254 nm that constantly irradiates the coil and drain pan surfaces.
- Fixture design and stainless steel construction make the ultraviolet light device suitable for saturated air conditions.
- Automatic disconnects are standard on all doors to prevent eye contact with the UV-C ultraviolet light.
- Special ultraviolet filtering glass windows block ultraviolet light, allowing the coil, drain pan and lights to be inspected while in use from outside the unit.



Benefits

- For pennies a day, UVGI improves IAQ by destroying mold, fungi, and bacteria on coil and drain pan surfaces.
- Clean coil surfaces maintain peak heat transfer for “near new” performance and lower energy costs.
- Reduced coil and drain pan maintenance requirements and costs.
- Rugged design of ultraviolet light device promotes long life.
- Factory installation promotes proper placement for maximum effectiveness and eliminates field labor costs.
- Satisfies GSA federal facilities standard requirements for UVGI lights to be incorporated downstream of all cooling coils and above all drain pans to control airborne and surface microbial growth and transfer.

Ultraviolet Lights and McQuay Air Handlers

As the building design and construction industry has evolved over the past 30 years, so too has the HVAC industry, keeping pace with the ever-increasing demands placed on the products and services that we supply. Sometimes, the job requirements have forced tradeoffs to achieve better indoor air quality or higher energy efficiency. It's not often that a technology comes along that is win, win. That technology is ultraviolet lights.

Why UV Lights?

The HVAC industry has worked well for 100 years with only limited use of ultraviolet lights in clean rooms and other sensitive applications. However, the devices are now a very logical and cost-effective addition to almost any air handling system in almost any application. This is particularly true in areas where ambient conditions routinely involve high humidity levels.

In fact, the most recent GSA facilities standard for federal facilities calls for UVGI lights to be incorporated downstream of all cooling coils and above all drain pans to control airborne and surface microbial growth and transfer.*

The obvious benefit of UVGI lights is the reduction of mold, bacteria, fungi and associated toxins that can enter the air stream. Because these items collect on wet cooling coils and drain pans, they can be effectively killed by constantly irradiating those surfaces with UVGI lights. The combination of high efficiency filtration and UVGI lights has been shown to be effective at improving and maintaining IAQ, even when added to an existing air handling system. The technology has advanced to the point where UVGI lights can be easily applied in virtually any air handling equipment – at a moderate cost – as long as there is a power source.

Other benefits associated with UVGI lights include reduced maintenance expense and coil performance that is maintained at its peak. The continuous “cleansing” action of UVGI lights serves to continuously clean the coil and drain pan. While regular maintenance and cleaning is always recommended, the task should involve much less time, effort and chemicals. Because coils remain cleaner, coil pressure drops and heat transfer characteristics can remain at “near new” conditions. This translates into efficient heat transfer and higher energy efficiency over the life of the equipment.

Conclusion

UV technology has advanced to the point where a case can be made to apply it in virtually any air handler application. In addition to the IAQ benefits, the potential cost savings generated by using UVGI lights can more than justify the expense to install and operate them. While UVGI lights can not replace traditional filtration, they can augment its effectiveness and potentially make any air handling system more effective at delivering good IAQ.

Contact your local Daikin sales representative for more information on how your building environment can benefit from innovative Daikin air handling systems, or visit www.DaikinApplied.com

* Details can be found on the GSA website at <http://gsa.gov/pbs/pe/facilitiesstandards/> under Section Five, Sub-Section 5.4, Page 130, and the paragraph titled “Drains and Drain Pans”.



SWP Self-Contained Systems



Applied RoofPak™ Rooftop Systems



Vision™ Indoor Air Handlers