

Indigo-Clean[®] Technology Frequently Asked Questions

To assist you in finding your answer quickly, we have broken our Frequently Asked Questions (FAQ) down into 4 topics:

- **General**
- **Safety**
- **Product Performance**
- **Operations**

General

What is Indigo-Clean?

Indigo-Clean is a lighting technology that lights the space and also provides continuous environmental disinfection using visible light technology. Because it uses safe, visible light, people can be in the room while it is in use.

What is the significance of the Indigo-Clean announcement?

The path to managing COVID just got a whole lot brighter with the announcement of Finelite integrating Indigo-Clean technology in select luminaires. Indigo-Clean technology is safe, continuous, and **effective at killing SARS-CoV-2*, Influenza-A* (the virus that causes COVID-19), Staph Aureus**** and a list of pathogens that negatively impact health and wellness. Not only is Finelite providing better lighting, it is also providing the added benefit of fighting infectious bacteria and virus at work, school, and any place people congregate.

How does Indigo-Clean Technology work?

Indigo-Clean Technology uses light-emitting diodes (LEDs) with a wavelength of 405 nanometers (nm). The light is absorbed by the organism creating an internal oxidizing reaction that kills it. Unlike UV, Indigo-Clean lighting technology is both direct and indirect. Reflecting off walls and other surfaces, it reaches the many shadowed areas UV light can't. Once exposed, pathogens are oxidized from within, no matter where they exist: in the air and on surfaces.

How does Single Mode Indigo-Clean Technology work?

Single-Mode Indigo-Clean Technology is a continuous environmental disinfection system that employs blended white + 405nm visible light on a single circuit board design to disinfect the space. When the light is on, disinfection is active. Indigo-Clean Technology contains no UV and is safe for room occupants.

How does Indigo-Clean relate to Finelite?

Finelite has licensed and integrated Indigo-Clean Technology into a broad selection of luminaires to provide safe, environmental disinfection.

What is the disinfection claim?

Finelite luminaires using Indigo-Clean Technology are proven to be effective by recently conducted independent lab testing to kill bacteria, Influenza-A, and SARS-CoV-2* – the virus that causes COVID-19.

How does Indigo-Clean Technology compare to UV light?

Indigo-Clean Technology uses safe, visible light to continuously disinfect the environment. As such, it can be used while people are in the space. Its effectiveness is also measured differently than UV. It provides a continuous reduction in bacterial count (measured over 24 hours) as compared to episodic (non-continuous) technologies whose effectiveness is measured in log10 kill (during the limited period in which it's applied).

Is Indigo-Clean Technology effective at less than 24 hours?

Yes, additional information on intermediate conditions is contained in the scientific results:

<https://www.biorxiv.org/content/10.1101/2021.03.14.435337v2>. Users are invited to come to their own conclusions regarding their specific conditions using this information.

How do you know it is working?

When you see Indigo-Clean Technology lighting a space, you can be sure the technology is working.

How should Indigo-Clean Technology be used to be most effective?

For optimum performance, continuously provide an average 50-60 footcandles on the work plane 24x7. Unlike UV lighting solutions, because it is safe to occupy a space while Indigo-Clean Technology is in use, you can depend on it 24x7 to protect people from viruses and bacteria. Dimming generally reduces effectiveness and increases the variation in the disinfecting light's visual appearance.

What applications are suitable for Indigo-Clean Technology?

Indigo-Clean Technology is ideal for any application where people congregate, including Commercial, Healthcare, Educational, Retail, Transportation, and more.

Do I still have to clean the room when using Indigo-Clean Technology?

Yes, Indigo-Clean Technology is intended to bolster your current cleaning efforts to further reduce harmful virus and bacteria in the environment.

Will Finelite offer Dual-Mode Indigo Clean Technology?

Yes, products will be available by year-end, 2021.

How does Dual-Mode Indigo-Clean Technology work?

Dual-Mode Indigo-Clean Technology utilizes a two circuit board design. When the space is occupied it utilizes a combination of blended white LEDs and 405nm LEDs. When the space is unoccupied, it utilizes just the 405nm LEDs with increased output to increase disinfection efficacy.

Safety

Does Indigo-Clean Technology light strain worker's eyes?

Indigo-Clean Technology is not UV; it is visible light. When mixed with complementary colors, it provides a white light that is the same as normal, overhead lighting and so it creates no additional strain for the eye.

Has this product been certified as safe by any third parties?

Yes, there are multiple international standards which assess the safety of light sources against the skin and eyes. Indigo-Clean Technology has been tested and evaluated against all of these standards and is certified as "risk exempt". This means that people can be in the space without exposure limits for any period of time. Safety is handled through a standard, IEC 62471, ACGIH, and/or ICNIRP. The IEC is an international standards organization. Before deciding on a disinfecting light solution, ask your lighting rep for the IEC certificate to validate that the solution is "risk exempt".

Product Performance

How many Indigo-Clean Technology light fixtures are needed in a room?

Multiple light fixtures are typically needed in a room based on the need for visual acuity and usage patterns. As a simple guideline, for optimal disinfection providing 50-60 footcandles on the work plane is recommended. Nearly all HP-2, HP-4, HP-6, and HPR fixtures are available with Indigo-Clean Technology and can be designed to meet this recommended practice.

How long do the lights need to be on each day?

The longer the lights are continuously on the better the disinfection. 24x7 use at 100% output is recommended for optimal disinfection.

Do you have any data demonstrating your product's performance?

Indigo-Clean Technology has been the subject of numerous, third-party referred publications. In addition, both the Medical College of Wisconsin and United Hospital Kenosha Medical Center Campus. Most recent research has proven its **effectiveness at killing SARS-CoV-2*, Influenza-A* (the virus that causes COVID-19)**—*<https://www.biorxiv.org/content/10.1101/2021.03.14.435337v1>

Will Finelite be offering additional Indigo-Clean luminaires beyond HP-2, HP-4, HP-6 and HPR?

Yes, Finelite will continually monitor the market applications and needs and will continue to integrate Indigo-Clean into existing and future products. Contact Finelite for inquiries into the potential integration with other Finelite luminaires.

How long will it take to ship Indigo-Clean luminaires?

Finelite ships all standard and Indigo-Clean products in 10 working days.

Operations

Are there any special installation instructions?

Single Mode Indigo-Clean Technology fixtures install the same way standard functioning fixtures do. Refer to specific product technical sheet for installation instructions.

Is complete energy consumption data available?

Yes, please refer to specific product technical sheet for performance data.

Is there a warranty?

Indigo-Clean Technology is covered under Finelite's 5-year performance based-warranty against defects in material and workmanship.

Additional Resources:

*<https://www.biorxiv.org/content/10.1101/2021.03.14.435337v1>

** Rutala W., Kanamori H., Gergen M., Sickbert-Bennett E., Sexton D., Anderson D., Weber D.J., Antimicrobial Activity of a Continuous Visible Light Disinfection System, ID Week 2016.

Indigo-Clean is a registered trademark of Kenall Manufacturing Co., a Legrand Company