

SPECTRACLEAN™ 254
GERMICIDAL LIGHTING





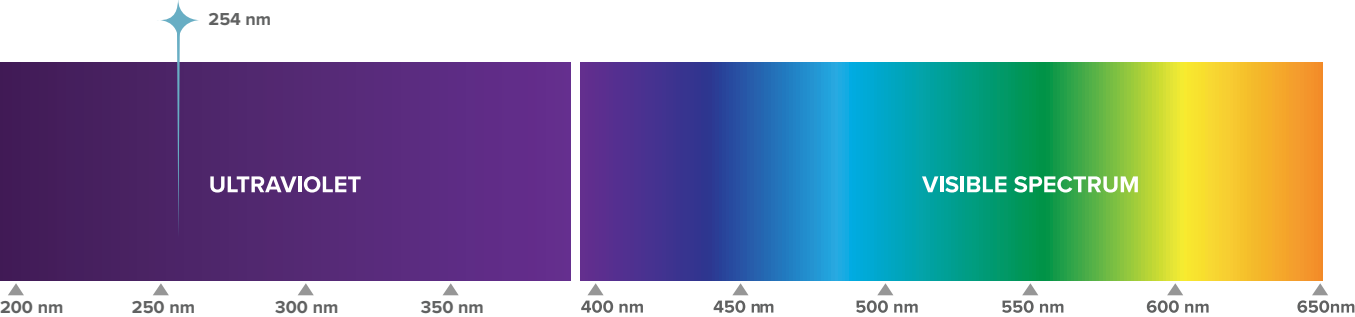
SPECTRA CLEAN™

Hubbell Lighting, as an early innovator of antimicrobial lighting systems, introduced 405 nanometer visible light with SpectraClean. Effective in suppressing bacteria, molds, fungi and yeast, SpectraClean 405 provides continuous environmental disinfection for use when the application is either occupied or unoccupied. As supplemental disinfection, SpectraClean 405 is effective in combating germs like E Coli, Listeria, Salmonella, MRSA, and Strep to help reduce issues caused by inadequate cleaning or poor hygiene.

Hubbell Lighting's industry-leading innovation continues with SpectraClean 254, a new germicidal lighting system solution for architectural and commercial applications. Hubbell Lighting's new SpectraClean 254 is the most rapid, expansive germicidal lighting system for disinfecting microorganisms and inactivating viruses like SARS-CoV-2. SpectraClean 254 integrates proven germicidal source solutions with Litecontrol luminaires for lighting with upper air disinfection.

How It Works

SpectraClean 254 is a rapid and powerful germicidal solution that inactivates viruses and kills bacteria like mold, fungi and yeast. SpectraClean 254 accelerates inactivation by changing the DNA/RNA structures of various pathogens. This action halts replication and ultimately dilutes the concentration of pathogens in exposed areas. Viruses such as SARS-CoV-2 (Coronavirus), Cocksackie virus B5 (Hand, Foot and Mouth) and Influenza (Flu) are susceptible to SpectraClean 254.



+
Supplemental
Complements traditional
disinfection efforts

>>
Fast
Inactivate common pathogens
in minutes

Effective
Near peak germicidal
effectiveness optimizes
disinfection

Indiscriminate
Inactivates a broad range of
viruses, bacteria, molds,
fungi & yeast

Integrated
Discrete integration of UVC
into architectural luminaires



Recreation & Wellness

- Locker Rooms
- Exercise Rooms
- Equipment Rooms
- Restroom Facilities



Education

- Hallways
- Lobbies
- Classrooms
- Restrooms
- Locker Rooms
- Gymnasiums
- Cafeterias



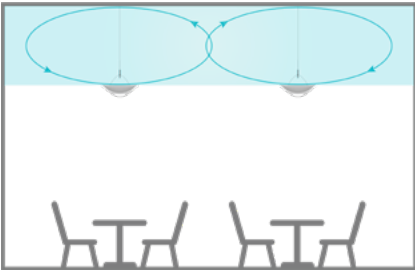
Commercial

- Community Centers
- Office Buildings
- Lobbies
- Conference Rooms
- Restrooms
- Cafeterias
- Hospitality

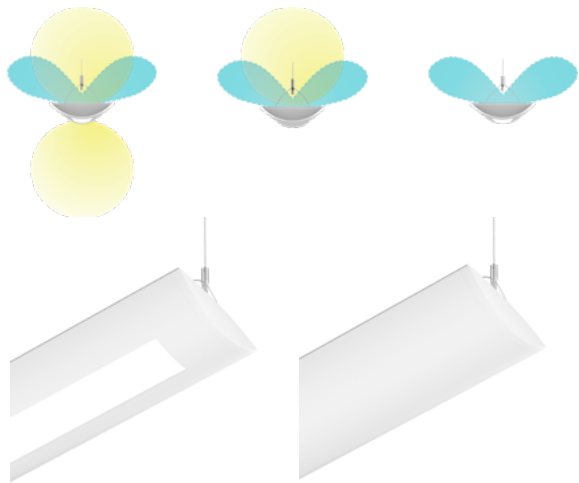
Lighting with Upper Air Disinfection

Litecontrol's upper air disinfection luminaires create a germicidal zone in an upper portion of the room away from occupants and sensitive materials. Standard building climate control systems move airborne pathogens from the lower part of a room into this germicidal zone. Pathogen inactivation occurs through the cumulative exposure to UVC over time. Each exposure cycle inactivates pathogens until the concentration in room is effectively diluted.

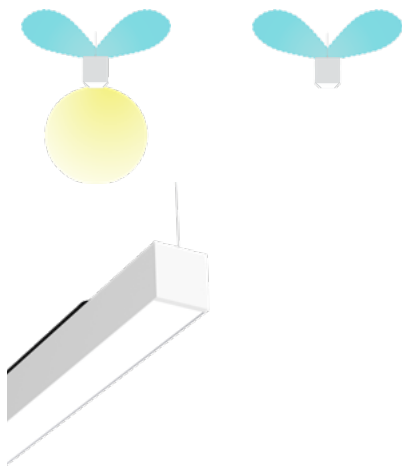
When combined with Direct, Indirect, or Indirect/Direct LED ambient lighting, rooms and open areas benefit from the combination of exceptional illumination, which offers effective disinfection in a stylized luminaire that seamlessly integrates into most commercial lighting applications.



Arcos™ 59L Pendant



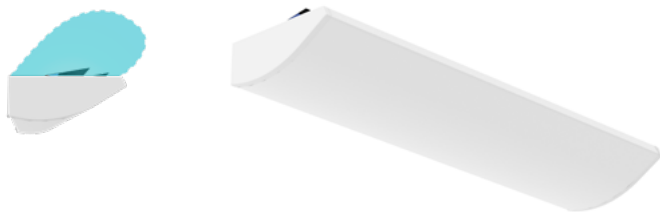
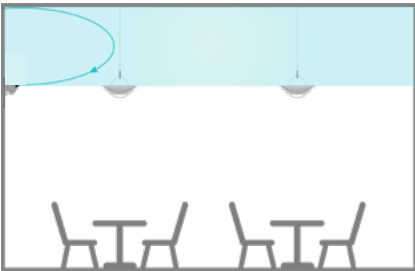
MOD™ 4L Pendant



Upper Air Disinfection

Litecontrol's SpectraClean 254 UVC only product solutions can be an effective tool for disinfecting specific areas within a room. UVC only systems operate independent of the lighting system and do not provide ambient lighting. These products are available as upper air disinfection systems, in pendant or wall mount forms.

Arcos™ 59L Wall



UVC Disinfection



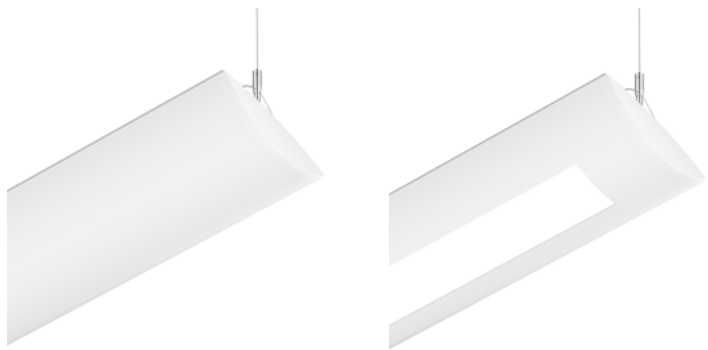
Ambient Lighting with Disinfection



Ambient Lighting



Litecontrol Luminaires

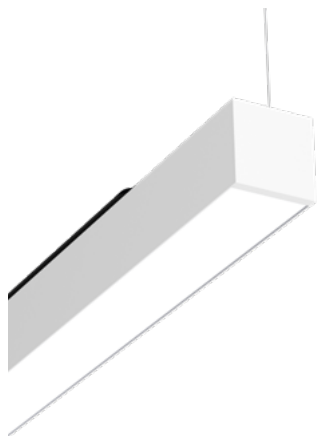


- Arcos® 59L I by Litecontrol
LED Pendant
 Applications: Education, Medical, Offices
- Safe and effective architecturally styled LED lighting with UVC upper air disinfection
 - Arcos, an arcuate form-factor available in 4' and 8' lengths (individual or continuous row)
 - Choice of visible light distributions, Indirect/Direct or Indirect, both with upper UVC air disinfection option
 - Cable pendant mounting
 - UVC lamp is recessed within the luminaire, shielded to ensure UVC rays are targeting the required upper air zone
 - Minimum 7' mounting above finished floor to ensure proper safety for occupants per ANSI guidelines
 - UL1598 annex L upper air UVC design guidelines
 - Simple time based “on/off” scheduling to control using onboard NX Distributed Intelligence™ controls or customer provided control system



- Arcos® 59L I by Litecontrol
Upper Air Disinfection, Wall
 Applications: Education, Medical, Offices
- Safe and effective architectural fixture with UVC upper air disinfection
 - Wall mounting
 - UVC lamp is recessed within the luminaire, shielded to ensure UVC rays are targeting the required upper air zone
 - Minimum 7' mounting above finished floor to ensure proper safety for occupants per ANSI guidelines
 - UL1598 annex L upper air UVC design guidelines
 - Simple time based “on/off” scheduling to control using external NX controls or customer provided control system

Litecontrol Luminaires



MOD™ 4L-P-D I by Litecontrol
LED Pendant Direct

Applications: Education, Medical, Offices

- Safe and effective architecturally styled LED lighting with UVC upper air disinfection
- MOD 4L, a 4" rectilinear form-factor available in 4' and 8' lengths (individual or continuous row)
- Direct visible light distribution with upper UVC coverage
- Specially designed "stacked V" UVC lamp baffle system to ensure UVC rays are targeting the required upper air zone
- Cable pendant mounting
- Minimum 7' mounting above finished floor to ensure proper safety for occupants per ANSI guidelines
- UL1598 annex L upper air UVC design guidelines
- Simple time based "on/off" scheduling to control using onboard Hubbell NX Distributed Intelligence™ controls or customer provided control system



SpectraClean™ 254 Control System for Upper Air Disinfection

SpectraClean 254 luminaire systems can include a digital control system to provide assurance that the UVC germicidal operates as intended in various applications without interfering with occupants in the space. With NX Distributed Intelligence™, the existing lighting control system has the ability to operate both upper air disinfection and visual lighting from a single system. Using embedded SpectraClean 254 functionality within NX, the system can be programmed from the controlHUBB app to operate the germicidal lighting in a variety of modes for upper air disinfection.



Scheduled SpectraClean 254

With Scheduled UVC, set times can be defined for the SpectraClean 254 system to operate if the space is unoccupied. Any occupancy can force the UVC lighting to turn off while allowing visual lighting to remain on.



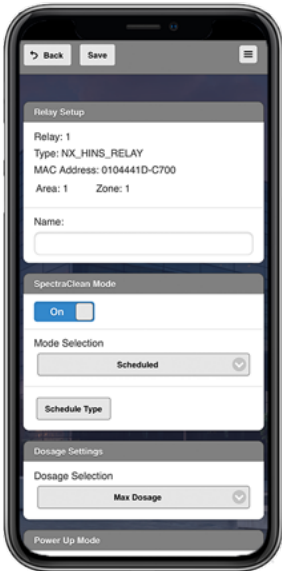
Prescribed SpectraClean 254

Specified daily dosage can be set for a scheduled period using Prescribed UVC. Once the prescribed dosage is achieved the UVC lighting will turn off. Any occupancy can force the UVC lighting to turn off while allowing visual lighting to remain on.



Post Occupancy SpectraClean 254

The system can be programmed through the Post Occupancy UVC to run the UVC lighting for a short period every time a space becomes unoccupied. Any occupancy can force the UVC lighting to turn off while allowing visual lighting to remain on.



NX Solutions | by Hubbell Control Solutions



NX Room Controller

The NX Room Controller (NXRCFX) provides specialized SpectraClean functionality to intelligently control both UVC germicidal lighting and visual lighting systems.



NX Bluetooth® Radio Bridge

Through the controlHUBB app, the NX system can be programmed using the NX Bluetooth Radio Bridge (NXBTC). Additionally, the NX Bluetooth Radio Bridge provides a real time clock in order to run SpectraClean schedules in addition to visual lighting schedules.



NX Sensors

NX Sensors ensure that a space is unoccupied to prevent occupant exposure to SpectraClean 254. Additionally, the NX sensors can detect occupancy for the visual lighting system.



NX Wall Stations

NX Wall Stations provide manual user control for the visual lighting system. The NX Wall Stations provide out-of-the box operation for simple room lighting control.

NX with Upper Air Disinfection



NX coupled with Upper Air SpectraClean 254 luminaires create a controlled germicidal zone in the upper portion of a room. Utilizing the NX SpectraClean functionality the upper air portion can be programmed to run at specific scheduled intervals, prescribed dosages, and even upon unoccupancy in commercial spaces. The NX system can also control the visual lighting in parallel without additional equipment allowing the two systems to operate independently.

SpectraClean™ 254 Estimator

SpectraClean™ 254 germicidal lighting solutions are fast and effective at disinfecting bacteria and inactivating viruses like SARS-CoV-2 (Coronavirus) and Influenza (Flu) for lighting with upper air disinfection. SpectraClean™ 254 upper air disinfection luminaires create a germicidal zone in an upper portion of the room away from occupants and sensitive materials. Standard building climate control systems move airborne pathogens from the lower part of a room into this germicidal zone. Pathogen inactivation occurs through the cumulative exposure to UVC over time. Each exposure cycle inactivates pathogens until the concentration in the room is effectively diluted. When planning placement and use of UVC upper air disinfection luminaires, there are two important values that must be calculated and understood.

- 1. The amount of time required to achieve a 99% reduction of a pathogen or virus
- 2. The maximum time the unit can be safely operated with occupants in the room

The goal is to understand the amount of time needed to achieve a 99% reduction of a pathogen or virus. The SpectraClean™ 254 Estimator will provide an estimate of luminaires needed, a recommended layout for a space and the amount of time the system needs to run to be effective.

The SpectraClean™ 254 Estimator is available via [web-browser](#) or download the free SpectraClean™ Estimator app from the [Google Play™](#) or [Apple® App Store](#).



Provided here are simple steps you will follow while using the SpectraClean™ 254 Estimator, but for detailed instructions reference the [SpectraClean™ 254 Estimator Quick Start Guide](#).

NOTE: This calculator is an estimation tool only. It does not guarantee performance of the system and should be used for pre-specification estimates only.

1

Step 1: Gather Information

You will need to gather information around the specific characteristics of the room and the luminaires you will be using in the space including:

- Room length, width, and height
- Luminaire type
- Pathogen or virus types you are interested in reducing
- Quantity of luminaires
- Mounting height of luminaires (Note: Minimum mounting height is 7’.)

2

Step 2: Enter the Information in the SpectraClean 254 Estimator

Once the information is entered into the SpectraClean 254 Estimator, click [calculate]. In Figure 1, the estimated time to reduce the selected pathogens by up to 99% is 72.56 minutes. This is higher than the suggested recommendation of 10–30 minutes so increase the luminaire quantity until you get to the suggested range.

3

Step 3: Tweak Information to Get Suggested Range

In Figure 2, the quantity has been increased from 2 to 8 luminaires, reducing the time to 18.14 minutes within the suggested disinfection range.

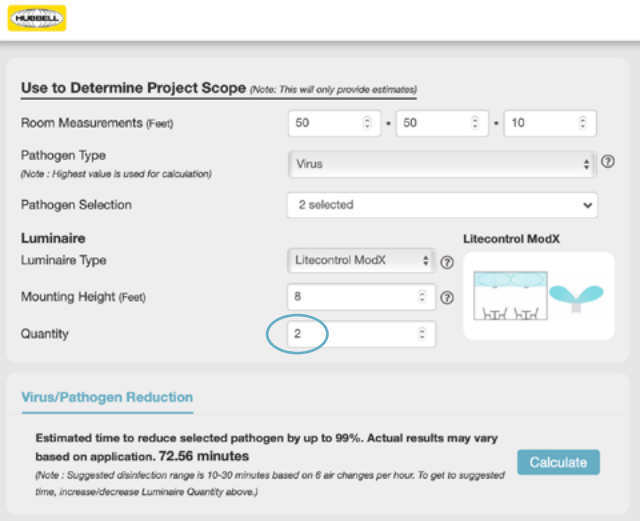


Figure 1

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Step 5: View Sample Layout of the Space

See a sample layout of the space with luminaires placed, click [View Plan].

4

Step 4: Determine Maximum Time

In Figure 3, download the IES file. Then use the [Maximum Exposure Guide] to determine the Maximum Irradiance. Input the Maximum Irradiance value into the field and click [Calculate]. For assistance with this calculation, contact your Hubbell Representative.

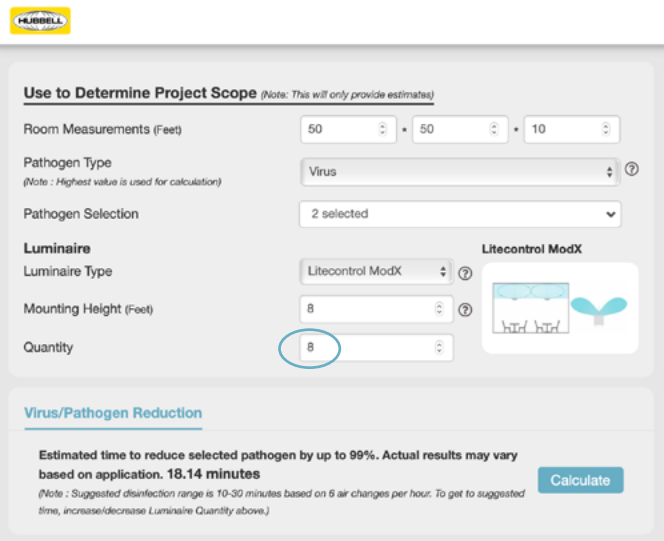


Figure 2

NOTE: The interface for the iOS® and Android® Apps is slightly different than the website but the steps are the same.

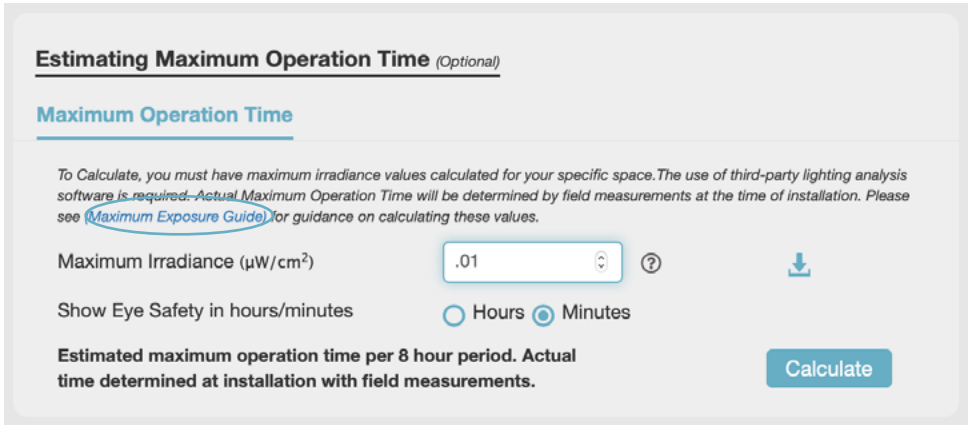


Figure 3

6

Step 6: Export the Plan to PDF

Export the analysis to a PDF document, click [Export PDF].



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COMPASS

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