



# The time to act is now

The American Rescue Plan Elementary and Secondary School Emergency Relief (ARP ESSER) Funds<sup>1,2</sup> are eligible for measures that will help implement the CDC's K-12 operational strategy for in-person learning to enable educators, staff, and students engagement, including improving school facilities exposure to environmental health hazards and virus transmission.

1. [Department of Education Announces American Rescue Plan Funds for All 50 States, Puerto Rico, and the District of Columbia to Help Schools Reopen \(article\)](#).

2. [U.S. Department of Education fact sheet \(PDF\)](#).

# Alkco Germicidal UV

Air & Surface Disinfection



## Upper air UV-C systems can help you prepare for the future

According to the CDC, filtering or cleaning the air in schools is an important COVID-19 prevention strategy.<sup>1,2</sup> Upper-air germicidal UV-C solutions can help supplement your disinfection treatment, especially if options for increasing ventilation and filtration are limited.<sup>3</sup>



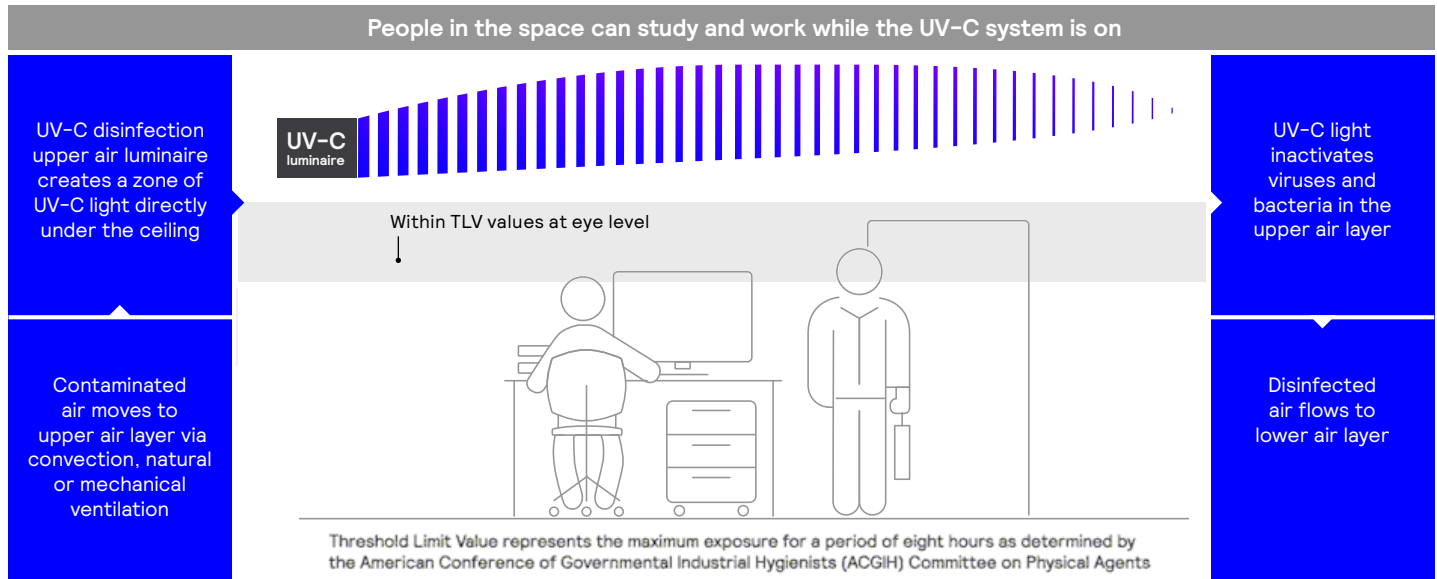
This pandemic has taken an extraordinary toll on students, parents, educators, and schools, and we know that our schools, students, and communities need help now to reopen safely and quickly, and to stay open.”

**Miguel Cardona**  
Secretary of Education

1. [U.S. Department of Education press releases.](#)  
2. [U.S. Department of Education fact sheet \(PDF\).](#)  
3. [CDC Covid-19 Ventilation in Buildings \(article\).](#)

### UV-C lighting can play a vital role in air quality improvement

People in the space can study and work while the UV-C system is on



### Validation of UV-C lighting's effectiveness on disinfecting the air

Studies have shown that UV-C technology is effective against airborne viruses (such as Influenza A and SARS-CoV-2)<sup>1,2</sup> and bacteria (such as *M. tuberculosis*).<sup>3</sup> Our Alkco UV-C upper air disinfection luminaire solutions utilize this technology and help to disinfect air in a room.<sup>4</sup>



#### Proven

We have a proven track record in innovative UV-C technology. All backed by solid development support.<sup>5,6</sup>

1. [McDevitt et al., 2012 \(article\)](#), [C.M. Walker and G. Ko, 2007 \(article\)](#), and [C.V. Beggs and E.J. Avital, 2020 article](#).

2. According to results obtained from a laboratory test conducted by Innovative Bioanalysis, a CAP, CLIA, AABB Certified Safety Reference Laboratory, in a room with sufficient air circulation. For more information, please refer to the [SARS-CoV-2USA-CA1/2020 test report](#).

3. [Mphahlele M. et al., 2015 article](#).

4. The germicidal effectiveness of UV-C lamps is proportional to the exposure time of the microorganism to the UV-C light source and the intensity of the UV-C light source. Therefore, sufficient air flow in the room (which may be achieved through forced air flow or natural convection) is required for effective operation of our UV-C upper air disinfection luminaire solutions.

5. EPA Report, "Building Retrofits for Increased Protection Against Airborne Chemical and Biological Releases" page 56.

6. Fluence (UV Dose) Required to Achieve Incremental Log Inactivation of Bacteria, Protozoa, Viruses and Algae Revised, updated and expanded by Adel Haji Malayeri, Madjid Mohseni, Bill Cairns and James R. Bolton. With earlier contributions by Gabriel Chevretils (2006) and Eric Caron (2006) with peer review by Benoit Barbeau, Harold Wright (1999) and Karl G. Linden.

# Alkco Germicidal UV

## Air & Surface Disinfection

### The power to protect in application

UV-C lighting can play an important role in neutralizing harmful viruses and bacteria. This additional layer of disinfection may provide a greater sense of comfort for teachers and coaches, as they lead students in in-person learning. UV-C upper-air disinfection can also run continually, helping to reduce the manual disinfection of classrooms with sprays or wipes throughout the day.



Our UV-C team of experts have put together a recommended product solutions chart for commonly use education spaces. The chart provides basic guidelines on where to use upper-air, direct and shared equipment product solutions.<sup>1</sup>

Package	Essential		Essential Plus			Proactive Care			
	Disinfection		Disinfection			Disinfection			
Feature	Air		Air + Equipment			Air + Equipment + Significant Surfaces			
	Disinfection of room air		Disinfection of room air and shared equipment			Disinfection of room air, shared equipment, and object surfaces			
Technology	Freestanding Disinfection Units	Upper-Air Luminaires	Freestanding Disinfection Units	Upper-Air Luminaires	Shared Equipment Disinfection Chambers	Freestanding Disinfection Units	Upper-Air Luminaires	Shared Equipment Disinfection Chambers	Direct Luminaires

Category	Room Type	Essential		Essential Plus			Proactive Care			
		Freestanding Disinfection Units	Upper-Air Luminaires	Freestanding Disinfection Units	Upper-Air Luminaires	Shared Equipment Disinfection Chambers	Freestanding Disinfection Units	Upper-Air Luminaires	Shared Equipment Disinfection Chambers	Direct Luminaires
Close Proximity	Restrooms		✓		✓					✓
	Break-out Room (small study room)	✓			✓					✓
	Athletic Facilities (lockeroom, weight room)		✓		✓	✓			✓	✓
	Gymnasiums (elementary)		✓		✓	✓			✓	✓
Extended Duration	Classrooms	✓			✓			✓		
	Labs	✓			✓			✓	✓	
	Library	✓			✓	✓		✓	✓	
	Offices (administration)	✓			✓			✓	✓	
	Assembly		✓		✓			✓		
Common Areas	Hallways		✓		✓			✓		
	Faculty (breakroom)	✓		✓	✓		✓		✓	
	Cafeteria		✓		✓			✓		
	Reception	✓		✓	✓	✓	✓		✓	

1. Each project should be treated uniquely, and should follow the proper safety and installation measures set forth by Signify.

# Alkco Germicidal UV

## Air & Surface Disinfection



### Germicidal UV

## 2x2 Grid Ceiling Mount

- Available 2x2 Grid ceiling mount housing
- 4 lamp 9W PL-S Philips TUV
- White or black polyester powder coated steel housing
- Mounting height of 9' to ceiling
- **Applications:** Offices, Education, Retail



**4 lamp PL-S Philips TUV**  
U2C409-UNV-1/4-EB

## Contaminant removal efficiency<sup>1</sup>

Room Size Examples	Dimensions (WxL)	Fixture Qty	Log1: 90%	Log2: 99%	Log3: 99.9%
Small Room	16'x16'	1	46 min	92 min	138 min
Medium Room	24'x24'	2	41 min	82 min	122 min
Large Room	40'x52'	8	25 min	50 min	75 min

1. Adapted from CDC (1994). Guidelines for preventing the transmission of Mycobacterium tuberculosis in health care facilities.

## General design guidelines<sup>2</sup>

- Minimum 9' Ceiling Height
- Minimum 12' distance between fixtures
- Minimum 6' distance between fixture and wall
- Estimate of minimum 250sqft area of disinfection per fixture

2. For specific application design support, please contact Signify directly. Above estimates are based on a UV-C radiation ceiling reflectance of 15% and 8 hour maximum exposure time. If ceiling reflectance is above 15%, please contact Signify for application design support. A list of common ceiling finish reflectances can be found in the Appendix section of the Commission Guidelines.

## Installation & Commissioning

Safety is supreme concern when dealing with UV-C products. Understanding safety precautions and proper installation is very important.

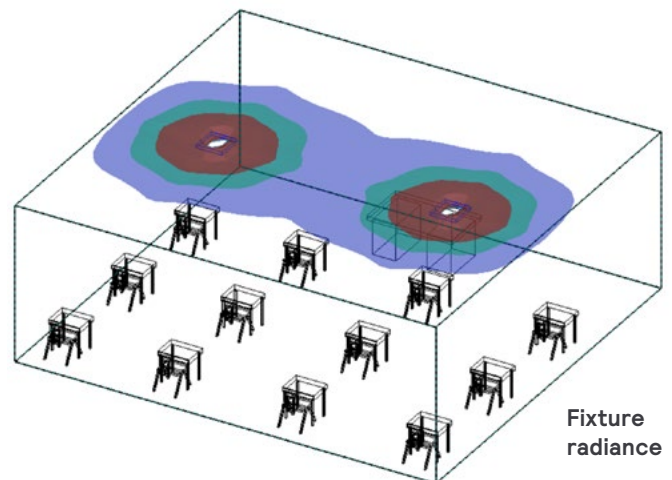
The effectiveness and proper application of a UV-C solution starts with the right application design and installation support.

### Step by step commissioning

Install the 2x2 Grid Ceiling Mount with AIKCO's self guided "Commissioning and Maintenance measurement" guidelines.

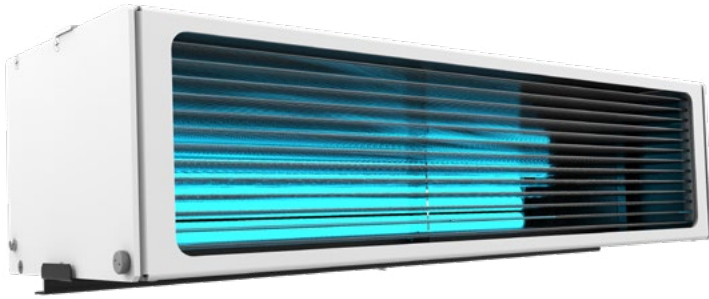
### End-to-end services

From planning & design to upkeep, Alkco's application and design professionals will assist with layout support and dosage calculations.



# Alkco Germicidal UV

## Air & Surface Disinfection



### Germicidal UV

## Louvered Wall Mount

- Available 22" white polyester powder coated housing
- 1 lamp 20 W T5 Philips TUV (lamps shipped separately)
- Specular aluminum reflector
- Wall mounting plate provided
- Mounting height of 8'3" to bottom of fixture
- **Applications:** Offices, Education, Retail



**1 lamp T5 Philips TUV**  
U2C409-UNV-1/4-EB

## Contaminant removal efficiency<sup>1</sup>

Room Size Examples	Dimensions (WxL)	Ceiling Height	Fix. Qty	Log1: 90%	Log2: 99%	Log3: 99.9%
Hallway**	4'x43'	9' (min.)	1	31 min	61 min	92 min
Medium Room	24'x28'	9' 6" (min.)	2	21 min	41 min	62 min
Large Room	30'x57'	9' 6" (min.)	4	28 min	56 min	83 min

1. Adapted from CDC (1994). Guidelines for preventing the transmission of Mycobacterium tuberculosis in health care facilities.

2. A 2 hour maximum exposure time in the Hallway example (other room examples are for 8 hour maximum exposure time).

## General design guidelines<sup>3</sup>

- Minimum 8' 3" mounting height to bottom of fixture
- Minimum spacing between fixtures is 8'
- Recommended to not have obstructions or walls less than 20' in front of fixture
- Minimum distance from the ceiling to the top of the fixture 9"
- Estimate of minimum 325sqft area of disinfection per fixture

3. For specific application design support, please contact Signify directly. Above estimates are based on a UV-C radiation ceiling reflectance of 15% and 8 hour maximum exposure time. If ceiling reflectance is above 15%, please contact Signify for application design support. A list of common ceiling finish reflectances can be found in the Appendix section of the Commission Guidelines.

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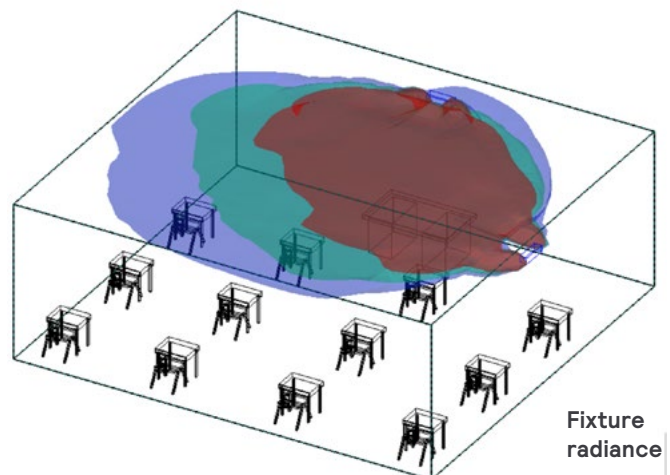
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Fixture radiance

### Other UV-C Luminaire & Solutions by Signify



#### Air

Disinfection solutions

#### UV-C disinfection upper air luminaires



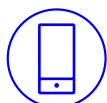
The Closed Air System (coming soon by Signify)



#### Surface

Disinfection solutions

#### UV-C disinfection direct luminaires



#### Object

Disinfection solutions

#### UV-C disinfection equipment luminaires



Once BioShift Chambers



#### Controls

Management solutions

#### UV-C controls



For UV-C product specification details, visit [www.alkco.com](http://www.alkco.com) or contact a Signify representative near you.

