CASE STUDY

Creating Cleaner Air and Safer Spaces with Visium at Harmony Learning Center

Implementing Visium's Far-UVC light fixtures reduces risk of infection in early childhood learning center.

OVERVIEW

The Harmony Kids Learning Center is a leading childcare facility in southern Minnesota dedicated to educating and caring for the children in the local area as well as Harmony Enterprises, a major area employer nearby.

HKLC sought an advanced solution to enhance sanitization in classrooms and high-touch areas, aligning with evidence-based industry best practices to further reduce the risk of pathogen exposure for students and faculty.

HKLC is a busy learning environment, with classrooms for infants, toddlers, Pre-K as well as after school programs for grade school kids with a cafeteria and gym alongside smaller study and learning spaces. These education spaces are open to the students and faculty for 12+ hours a day with minimal down time.

VISIUM

THE CHALLENGE

Traditional terminal cleaning methods leave gaps in sanitation between cleaning sessions, allowing germs to accumulate on high-touch surfaces like desks and changing tables, particularly in a busy learning environment when some occupants are sick.

OUR SOLUTION

Visium Far-UVC

Eleven Visium Far-UVC devices were installed in key areas, including classrooms for infants, toddlers and Pre-K with a focus on diaper changing tables and high activity area.

Both Visium Diffused and Clear models were deployed, allowing for a tailored approach to each space's needs. Despite high traffic and varying ceiling heights, the installation was seamless and supported by local electricians.

KEY FEATURES

24/7

Continuous air and surface sanitization all day and night while activated

222

Far-UVC is proven to reduce pathogens safely in occupied spaces

CERTIFIED 8802 UV Germicidal Products

CERTIFIED 2998 Zero Ozone Emissions

CARB CERTIFIED Meets California Ozone Emission Limits

*Diffused optics only

Third-Party Risk Analysis

The risk analysis modeled an average 8-hour day in the classroom with one “supper-shedder” – a person giving off a high concentration of viral particles. The Far-UVC light emitted, room dimensions, and ventilation conditions were used in Wells-Riley modeling to calculate the risk of infection with ventilation alone and with Visium Far-UVC. Calculations carried out by Roger Williams University, Dr. Jacob Bueno de Mesquita.

The Results

Results showed:

- 90% whole room inactivation of H1N1 in under 3 minutes
- Infection risk over 8 hours:
  Without Far-UVC: 65%
  With Far-UVC (H1N1): 4.5%
  With Far-UVC (SARS-CoV-2): 7%

Visium fixtures boosted the room’s ventilation from 3 ACH (air changes per hour) to 65 eACH (equivalent air changes per hour). Reducing risk of infection by 60.5% with

- No added noise
- Virtually no visible light
- Minimal energy consumption

Viral Control Effectiveness

Expected rate of air cleaning => 65 eACH (avg fluence of 0.875µW/cm^2

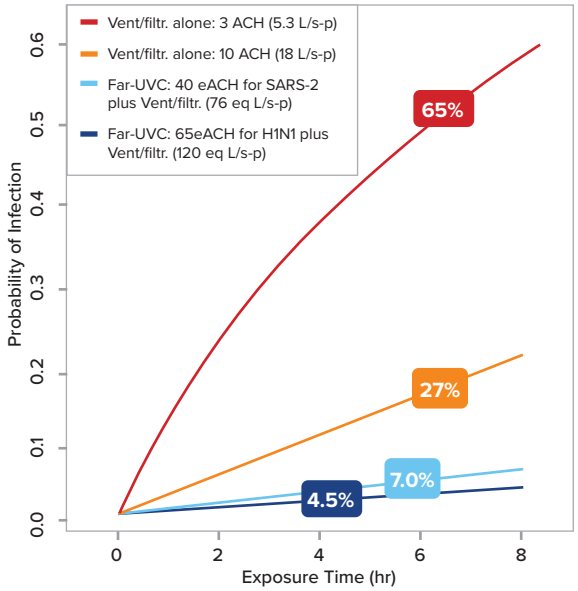

Fig. infection risk (%) after 8 hr with 1 infectious person shedding 100 ID/hr

**Using Wells-Riley model*

Low (4.5%) infection risk from a high infection person with H1N1

*Risk reduced 60.5% compared with decent ventilate space after 8 hr sharing the air.

“Thanks to Visium and their cutting-edge technology… we are proud to offer an environment that supports the well-being of our students and staff, allowing them to focus on what matters most – learning and development.”

Umbelina Cremer
Owner & Executive Director
Harmony Kids Learning Center

Conclusion

HKLC sets a high bar for themselves in regard to cleanliness of their spaces and their dedication to seek greener, eco-friendly solutions to room hygiene. Visium installations allowed them to achieve their goals of improved air quality and surface sanitation without undue disruption to the students and faculty.

HKLC representatives see Visium installations as an additional safeguard for students against seasonal flu risks and as a new layer of protection provided by their cleaning regimen.

Contact & Next Steps | Ready to learn how Visium can transform your spaces? Find information about Visium and its applications at Visium.one.