

CASE STUDY

Fighting Bioaerosols and Building Cleaner Dental Spaces at LECOM

Implementing Visium Far-UVC light fixtures reduces microbial load on dental suite surfaces.

OVERVIEW

The LECOM School of Dentistry is an institution dedicated to practical, hands-on training of dental professionals, leading the field with cutting edge safety measures for students and staff.

Dental suites are large generators of bioaerosols. LECOM's School of Dentistry sought a solution to reduce risk of aerosolized microbes to staff and students in the close quarters of dentist-patient interactions.

LECOM is an active teaching facility, with large lecture halls, practicum rooms, and cafeteria alongside a functioning dental clinic. The LECOM dental clinic is open to the public 12 hours a day.





THE CHALLENGE

Traditional terminal cleaning methods leave gaps in sanitation between cleaning sessions, allowing germs to accumulate on high-touch surfaces. In a dental suite, the biggest culprit is the bioaerosols generated during dental cleanings. With the addition of Far-UVC air treatment, bioaerosols can be inactivated and lead to lower risk patient interactions for staff and students.

OUR SOLUTION

Visium Far-UVC

Two of Lit Thinking's Visium devices were installed in a dental suite that actively serves patients. Far UVC will continuously inactivate bioaerosols and surface bioburden in this 100 sqft space. Devices were recessed into the ceiling for seamless integration within the room.



KEY FEATURES



Continuous air and surface sanitization all day and night while activated



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



Visium app bridges IoT connectivity for real-time monitoring via mobile devices



Third-Party Test Results

Sampling taken of high touch surfaces of the Visium dental suite compared to an identical, non-Visium suite demonstrate the reduction of bacterial bioburden throughout patient appointments.

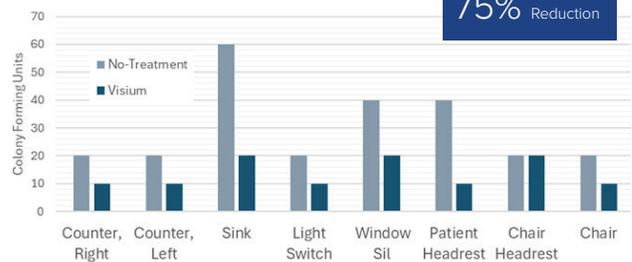
Fourteen locations in the two rooms had their surfaces swabbed for comparison and quantification by an independent test lab, Culturewell.

Visium had been used in the dental suite for a month ahead of sampling, demonstrating that a new, lower surface bioburden level has been established.

Results showed that Visium reduced the bacterial abundance on high touch surfaces and kept them up to 98% lower than the identical suite without Far-UVC.

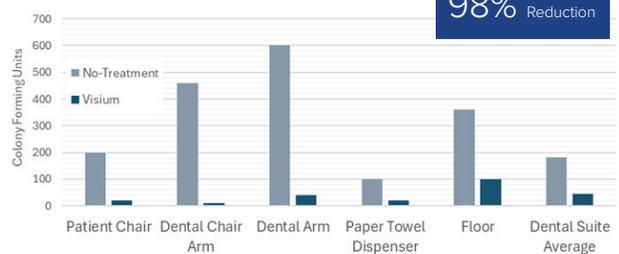
Dental Suite High-Clean Surfaces
(With and Without Visium)

Best Reduction
Patient Headrest
75% Reduction



Dental Suite High-Burden Surfaces
(With and Without Visium)

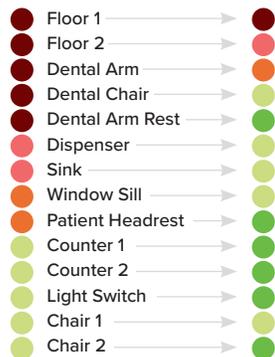
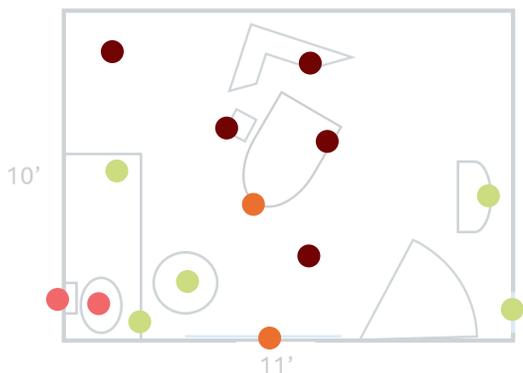
Best Reduction
Dental Arm Chair
98% Reduction



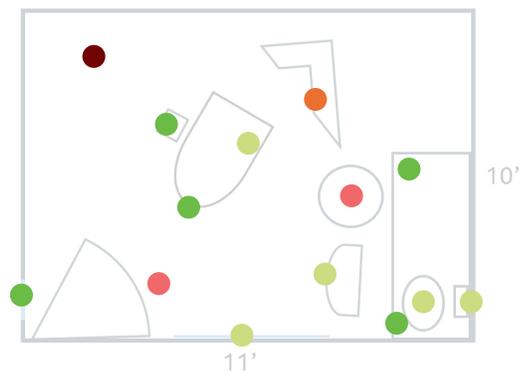
Dental Suite Heatmap | Heatmap of the rooms based on the CFUs presented in the above graphs show an overall reduction focused around the areas where patients are located.



Non-Visium Dental Suite



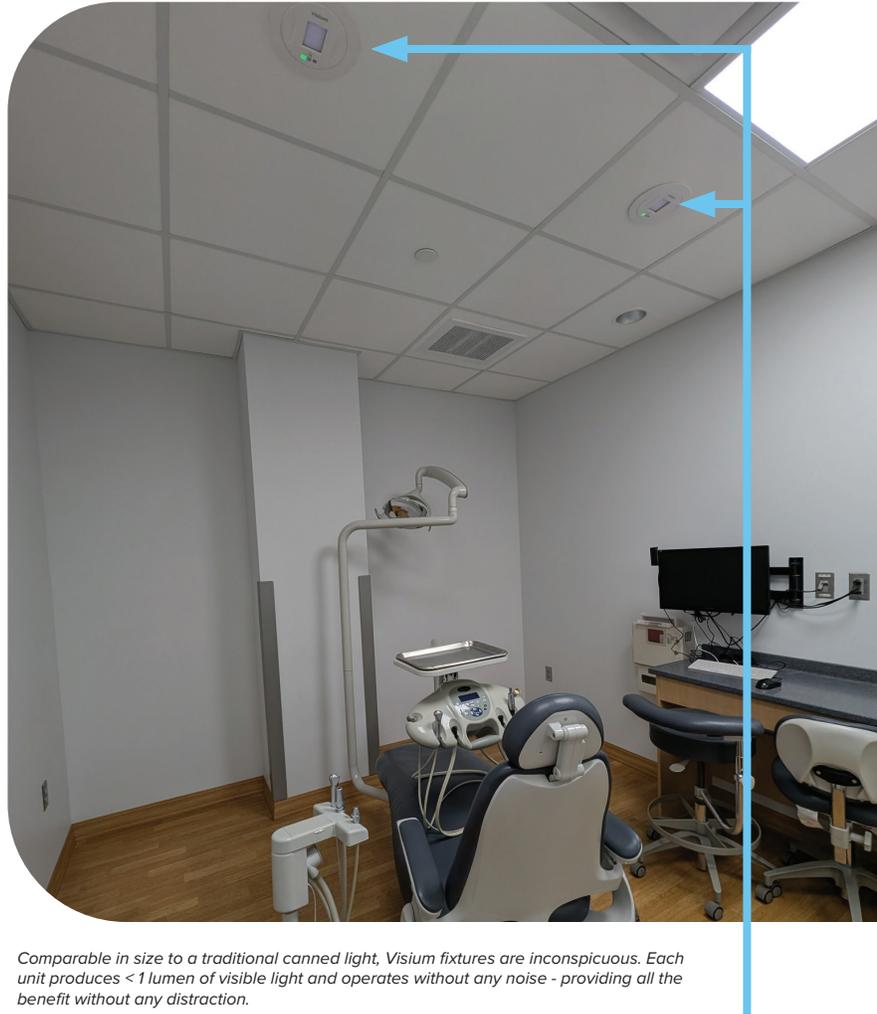
Visium Dental Suite



Outcome

Visium seamlessly integrated into the LECOM School of Dentistry facilities and their established hygiene plans, providing continuous sanitization verified by biological sampling.

- ✓ Samples collected from the Dental suites were independently analyzed and demonstrated bacterial reduction with consistent Visium use
- ✓ Up to 98% reduction of colony forming unites (CFUs), even with active use of the space
- ✓ Visium reduced the amount of known bioaerosol bacteria, reducing risk to staff and students



Comparable in size to a traditional canned light, Visium fixtures are inconspicuous. Each unit produces < 1 lumen of visible light and operates without any noise - providing all the benefit without any distraction.

Conclusion

LECOM School of Dentistry is committed to seeking greener, eco-friendly solutions to room hygiene for the benefit of their staff, students, and patients. Unwilling to compromise on cleaning efficiency, Visium was able to meet and exceed their expectations to improve air quality and surface sanitation without disrupting patient appointments.

Even with the Visium dental suite in consistent use, the amount of colony forming units on the surfaces of the room were kept lower compared to the non-Far-UVC suite. LECOM representatives view Visium installations as an additional safeguard for students against the risks of bioaerosols and seasonal illnesses.

Contact & Next Steps

Ready to learn how Visium can transform your spaces?
Find information about Visium and its applications at Visium.one.