

Antimicrobial Lighting Technology in an active elementary school classroom

Case Study Abstract

Partner/Study Location: Taconic Hills Central School District, K2 Special Education Classroom, Craryville, NY

Study Objective: Test efficacy of Vital Vio's Antimicrobial technology at reducing surface contamination in an actively used classroom

Test Parameters: RODAC contact plates were pressed to 5 different surfaces/sites per sampling time and incubated. Colony counts were obtained by counting the colonies that grew on each plate. Samples were taken for 3 days while students were in the classroom before lights were installed. Post-installation sampling occurred for 5 days each sampling week, for a total of 25 sites per week and were taken at weeks 3 and 14 post-install.

Conducted by: Dr. Sara Shelley- Lead Microbiologist at Vital Vio, Dr. Neil Howard- Superintendent of Schools, and students

Study Conclusions: This study showed a decrease in the average colony count starting at 3 weeks post-install, the first post-installation time point and showed statistically significant reductions by the conclusion of the study.

A study was performed in an actively used classroom in the Taconic Hills Central School District. This classroom was a K-2 Special Education classroom that had students in it for a summer program and again when the school year started in September. A total of 19 2' x 2' antimicrobial fixtures were installed in the middle of July 2017.

Methods: Five different surfaces in the room were sampled with non-selective RODAC plates at 3 different time points: Pre-installation and weeks 3 and 14 post-installation. The sites selected were high use surfaces composed of a variety of materials and included the top of lockers, the sink, a table used by students, the teacher’s desk, and a computer desk. All 5 sites were sampled for three days during the pre-installation time point. During the post-installation sampling, the sites were sampled for five days during each time point, for a total of 25 plates per time point. Each colony represents a single bacteria or fungi on the surface sampled. Plates were counted from each time point resulting in a colony forming unit value (CFU) for each site on each day. Averages were obtained for each sampling week across all days and sites during that time point.

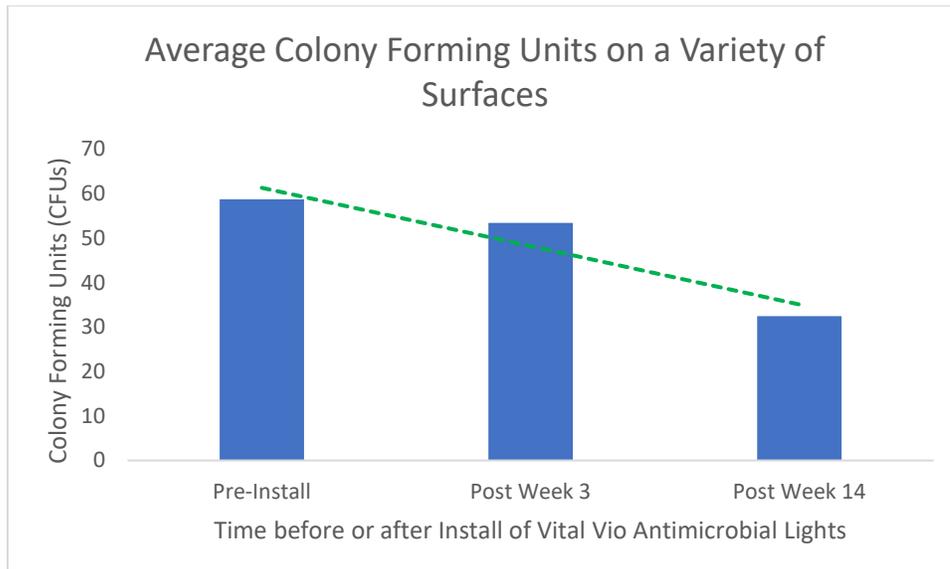


Figure 1. This figure shows the average number of colony forming units from all sampling sites across all days of the time point.

Results: All post-installation times show an average colony count that is lower than the pre-installation samplings. An ANOVA test shows statistically significant decreases in average colony counts between the time points ($p=0.04$), showing that Vital Vio lights can reduce surface bioburden in an actively used elementary school classroom. By the final time point, there was a 45.8% reduction in average colony count compared to the pre-install values.