

## **UL Remote Air Quality Monitoring**

CEC is pleased to receive copy of UL testing of the in cab air quality of Sterilyft in comparison side by side to a standard exhaust fan ventilated elevator during a one month trial period utilizing two actively used passenger elevators in an occupied building.

CEC is very thankful for the cooperation and coordination of this test in conjunction with an installation performed by ELCON Enterprises, Inc in Virginia.

For the test results below, Car 12 represents passenger elevator with Sterilyft and car 13 represents passenger elevator with only typical type exhaust fan.

Following is our takeaway of the attached UL results:

### **PARTICULATE MATTER (PM10) – Particles less than 10 microns**

UL REL = 50 ug/m<sup>3</sup> [World Health Organization (WHO) respirable particles (24-Hour mean)]

Car 13 = 13.1 ug/m<sup>3</sup> avg

Car 12 = 0.59 ug/m<sup>3</sup> avg

Sterilyft represents 95.5% less contamination than exhaust fan only. It should be noted that viral carriers (sneeze, cough or expelled particulate) falls within about 75% approximately 10 microns and less than 25% 1-5 microns.

### **PARTICULATE MATTER (PM2.5) – Particles less than .5 microns**

UL REL = 35 ug/m<sup>3</sup> [EPA (NAAQS) (24-Hour mean)]

Car 13 = 12.6 ug/m<sup>3</sup> avg

Car 12 = 0.53 ug/m<sup>3</sup> avg

Sterilyft represents 95.79% less contamination than exhaust fan only. It should be noted that viral carriers (sneeze, cough or expelled particulate) falls within about 75% approximately 10 microns and less than 25% 1-5 microns.

### **PARTICULATE MATTER (PM1) – Particles less than 1 micron**

Car 13 = 9.86 ug/m<sup>3</sup> avg

Car 12 = 0.25 ug/m<sup>3</sup> avg

Sterilyft represents 97.46% less contamination than exhaust fan only. It should be noted that bacteria measures approximately .4 microns and virus range from .02 to .25 microns. Corona virus in particular is approximately .125 microns

### **PARTICULATE MATTER (PM>0.3) – Particles less than .3 microns**

Car 13 = 2197 particles avg  
Car 12 = 237 particles avg

Sterilyft represents 89.21% less contamination than exhaust fan only. It should be noted that bacteria measures approximately .4 microns and virus range from .02 to .25 microns. Corona virus in particular is approximately .125 microns

### **VOLITILE ORGANIC COMPOUNDS (VOC)**

UL REL = 500 ug/m3 (300 ppb) [US Green Building Council]

Car 13 = 422 ug/m3 avg  
Car 12 = 284 ug/m3 avg

Sterilyft represents 32.7% less contamination than exhaust fan only. As car 13 is at the threshold for Green Building standards, car 12 is at slightly over half of the standard.

### **SIGNIFICANCE**

As we are all reminded by CDC, WHO and NIH, the spread of Corona virus (as well as many other infectious contagion, is transmitted via viral carriers be it sneezing, coughing or other expelled droplet particles from human to human. This being said, it is abundantly clear that by the reductions of these particles in excess of 95% as in the case of a typical elevator will substantially reduce the exposure of passengers in the elevator to these transmission vehicles. In addition, as to free floating bacterial or viral pathogens, the further reduction of particles in the sub micron area clearly shows further risk mitigation of bacterial or viral transmission by the reasonable result in reduction of particles less than 0.3 microns by over 89%.

Further efficacy testing will be conducted on bacterial and viral inactivation however, with UV-C 254nm irradiation trials widely tested and accepted, the added result of the efficacies in the area of 99.97% success is substantial be it as the carriers of infectious particulates and infectious particulates themselves are removed from the passenger cab enclosure in excess of 89-97% as determined above.

ATTACHED: UL remote air quality monitoring test results dated 8/20/20, data collection from 7/20/20 through 8/20/20. Building and building owner name has been redacted for privacy.