

# MICROBIOLOGY REPORT



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Date: May 22, 2020  
Test Type: Viral Single-Pass Efficiency

Test Requested by: Genesis  
Contact: Dan Briggs

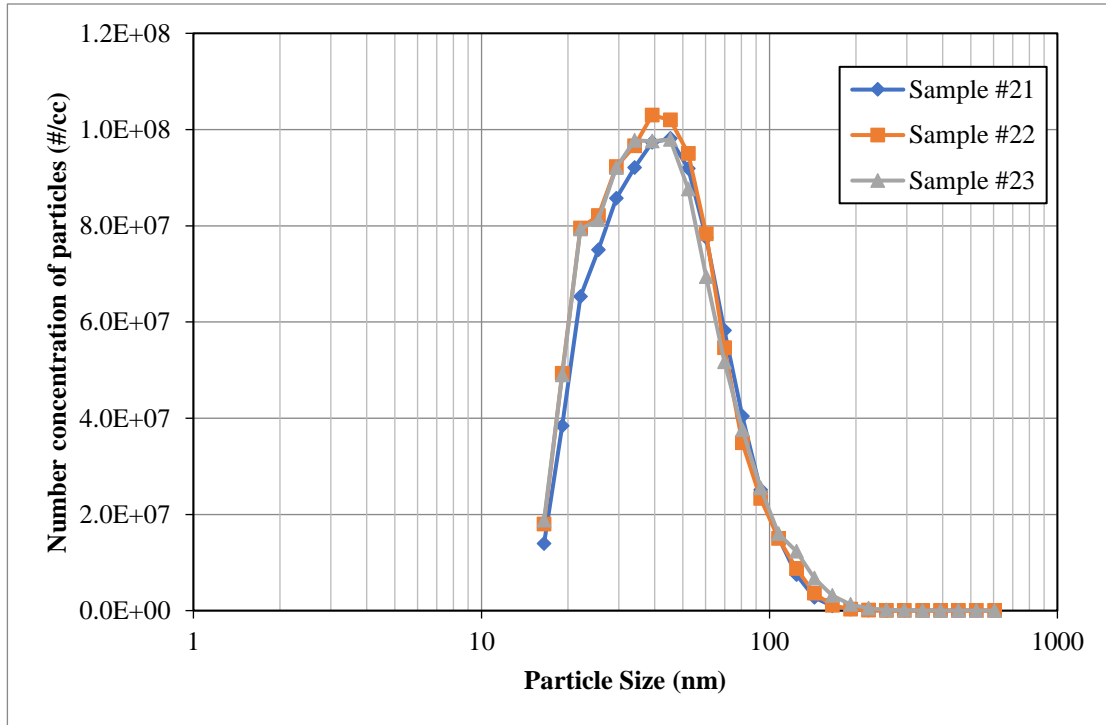
### Scope

1 device and 1 Pre-filter submitted by Genesis Air for single-pass efficiency testing with MS-2 bacteriophage (ATCC 15597-B1) as the challenge organism.

### Method

The single-pass efficiency tests were conducted in a horizontal ASHRAE 52.2 stainless-steel test duct with a cross-sectional dimension of 24"x24". The tests were performed under positive pressure with a blower pushing air through the filter and removal device. The test system airflow for all 24"x24"x2" and 4" filters was 2000 CFM for a filter face velocity of 500 FPM.

Organism were grown on appropriate media, harvested, and resuspended in saline to  $5 \times 10^6$  pfu/ml. Suspensions of the organisms were then aerosolized into the test duct using a nebulizer situated 8-feet upstream of the test filter. While the challenge aerosol was injected into the test duct, both upstream and downstream air samples were taken using SKC BioStage cascade impactors for 5-minutes at calibrated sampling rates of 28 liters/min. This was repeated few times to collect statistically valid number of organisms.



Particle size distribution of challenge virus



Prefilter



Filter with UV lights

Data:

	Upstream cfus	Downstream cfus	Efficiency
Device + filter	1356	153	88.7%
Device only	1158	684	40.9%