

MICROBIOLOGY REPORT



LMS Technologies, Inc.

6423 Cecilia Circle
Bloomington, Minnesota 55439, U.S.A.

Tel: (952)-918-9060
Fax: (952)-918-9061

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Test Requested By:

Test Type: Single-Pass Efficiency

Scope

Test unit provided by customer for single-pass efficiency testing with *Staphylococcus aureus* (10832) and MS-2 bacteriophage (ATCC 15597-B1) as the challenge aerosol contaminant.

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" x 24". The tests were performed under positive pressure with a blower pushing air through a HEPA filter bank to provide particle-free air into the test duct airstream. The test system airflow was 2000 cfm.

Organisms were grown on appropriate media, harvested, and resuspended in saline. The nebulizer was 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 Bio-Sampler units calibrated to a flow rate of 12.5 L/min.

Staphylococcus Aureus:
Sample time was 30 minutes

Unit Off		
	Upstream	Downstream
Concentration (CFU/ft ³)	2.33x10 ⁶	1.14x10 ⁶
Log(concentration)	6.37	6.05

Unit On		
	Upstream	Downstream
Concentration (CFU/ft ³)	2.49x10 ⁶	19.81
Log(concentration)	6.40	1.30

MS-2 bacteriophage:
Sample time was 45 minutes

Unit Off		
	Upstream	Downstream
Concentration (PFU/ft ³)	4.73x10 ⁶	3.12x10 ⁶
Log(concentration)	6.67	6.49

Unit On		
	Upstream	Downstream
Concentration (PFU/ft ³)	2.31x10 ⁶	6.5x10 ²
Log(concentration)	6.36	2.81