

MICROBIOLOGY REPORT



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Date: July 15, 2021
Test Type: Single-Pass Efficiency
Test Requested by Daikin

Scope

1 UV + filter air cleaner was submitted by Daikin for single-pass efficiency testing with MS-2 bacteriophage (ATCC 15597-B1) as the challenge organism. Model # Dustfree TOW21.

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 device.. The test system airflow for the test device was 2000 cfm

Organism were grown on appropriate media, harvested, and resuspended in saline to 1×10^8 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 28.3 liters/min.

Data:

	Hole Corrected MS-2 Pfu			
	Test-	Test Down	Nat Decay-up	Nat Decay-Down
UV	81.8	1	72.1	63.7
UV + filter	149.9	1	72.1	63.7

	Dustfree		
Mean of 3 runs	Hole Corrected Upstream Count	Hole Corrected Downstream Count	Removal Efficiency %
UV	81.8	1.0	98.6
UV + Filter	149.9	1.0	99.2

MS-2 Upstream Pfu

MS-2 Downstream Pfu

