



3933 US Route 11  
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Order No. 3098477

Date: June 7, 2006  
Revised: July 31, 2006

REPORT NO. 3098477-002a

TEST OF ONE  
IQAIR PERFECT 16 ID-2225  
AIR FILTER

RENDERED TO

IQAIR NORTH AMERICA, INC  
10440 ONTIVEROS PLACE,  
UNIT 1  
SANTA FE SPRINGS, CA 90670

### General

This report covers a test of one air filter, performed according to ASHRAE Standard 52.2-1999 entitled "Method of Testing General Ventilation Air Cleaning Devices for Removal Efficiency by Particle Size".

Testing was authorized by signed quote 20286199.

### Identification of Test Specimen

The filter tested was designated as one IQAir Perfect 16 ID-2225 air filter. A description is included in the data section on page four of this report.

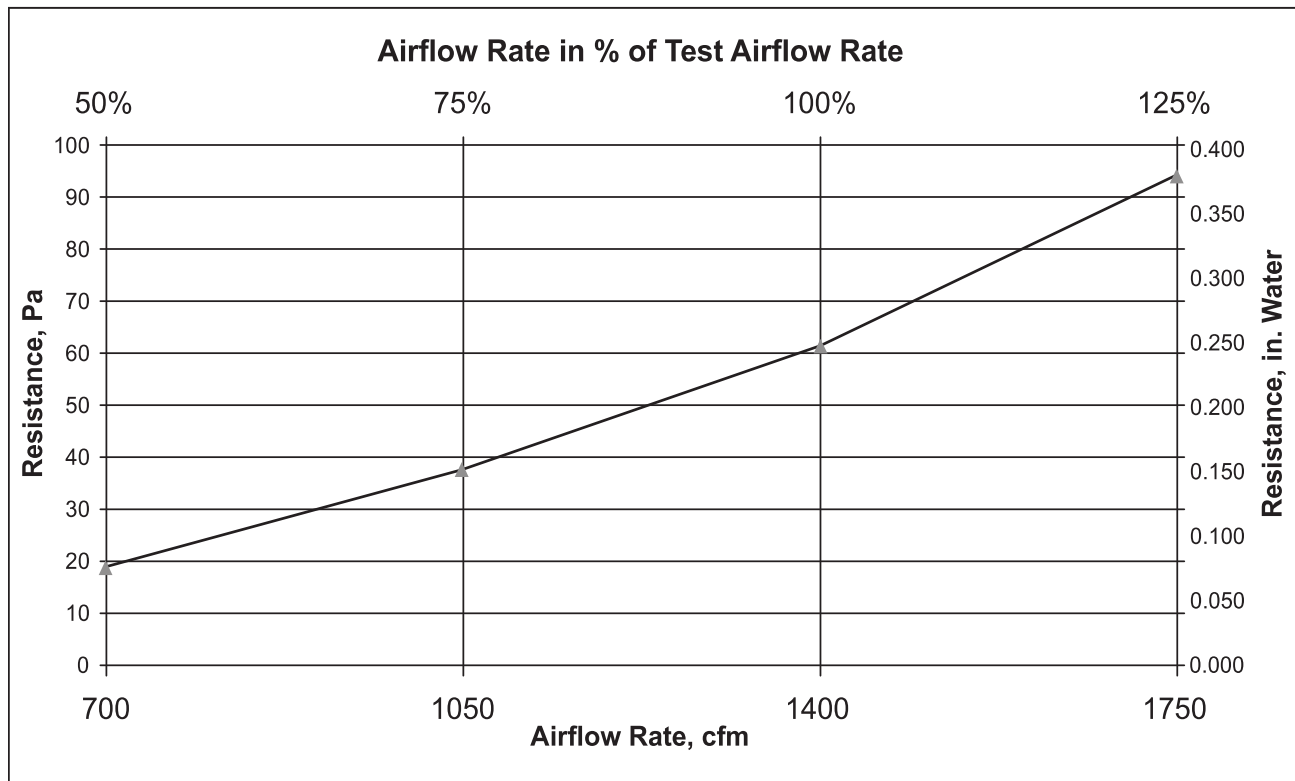
### Method of Test

Tests were conducted as specified in ASHRAE Standard 52.2-1999. The test program consisted of measurement of initial resistance versus airflow rate (Section 9), and the test program for determination of particle size efficiency (Section 10). The test apparatus used was that specified in the above referenced standard. ASHRAE Synthetic Test Dust, as specified in Section 6.2, was used for dust loading.

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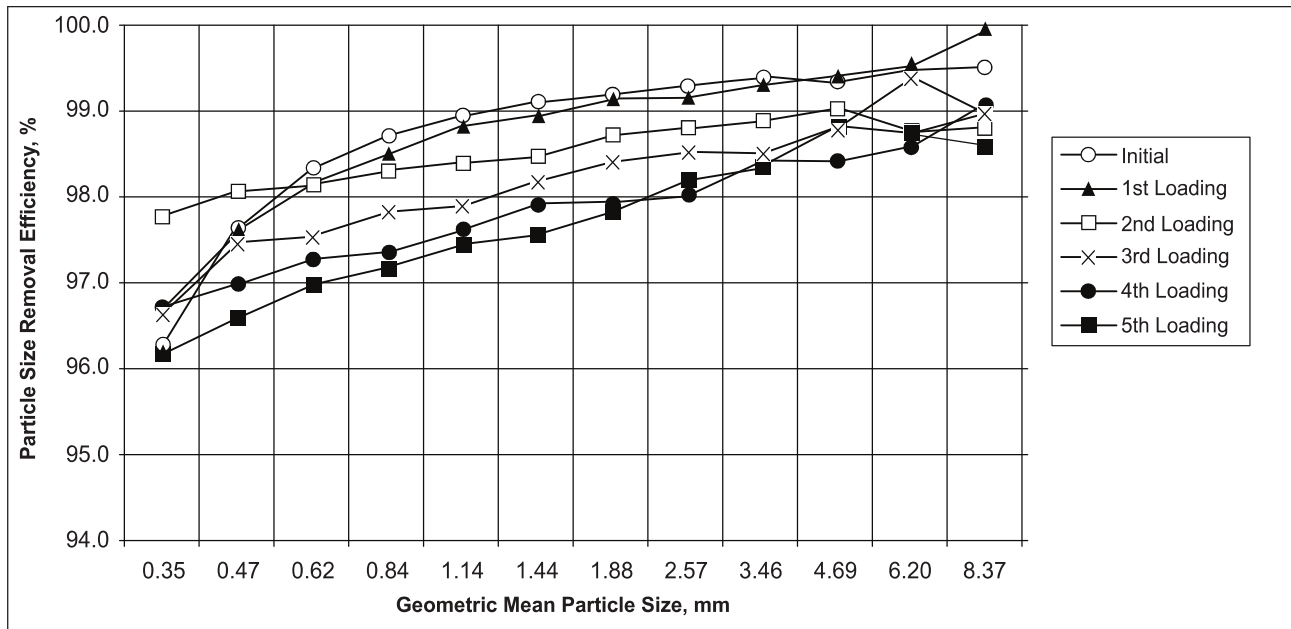
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**Graph 1: Resistance of Clean Device vs. Airflow**

Airflow Rate in % of Test Airflow Rate	Air Velocity		Airflow Rate		Resistance	
	m/s	fpm	m <sup>3</sup> /s	cfm	Pa	in H <sub>2</sub> O
50%	1.25	246.0	0.33	700	19	0.076
75%	1.87	369.0	0.50	1050	38	0.151
100%	2.50	492.0	0.66	1400	61	0.246
125%	3.12	615.0	0.83	1750	94	0.379

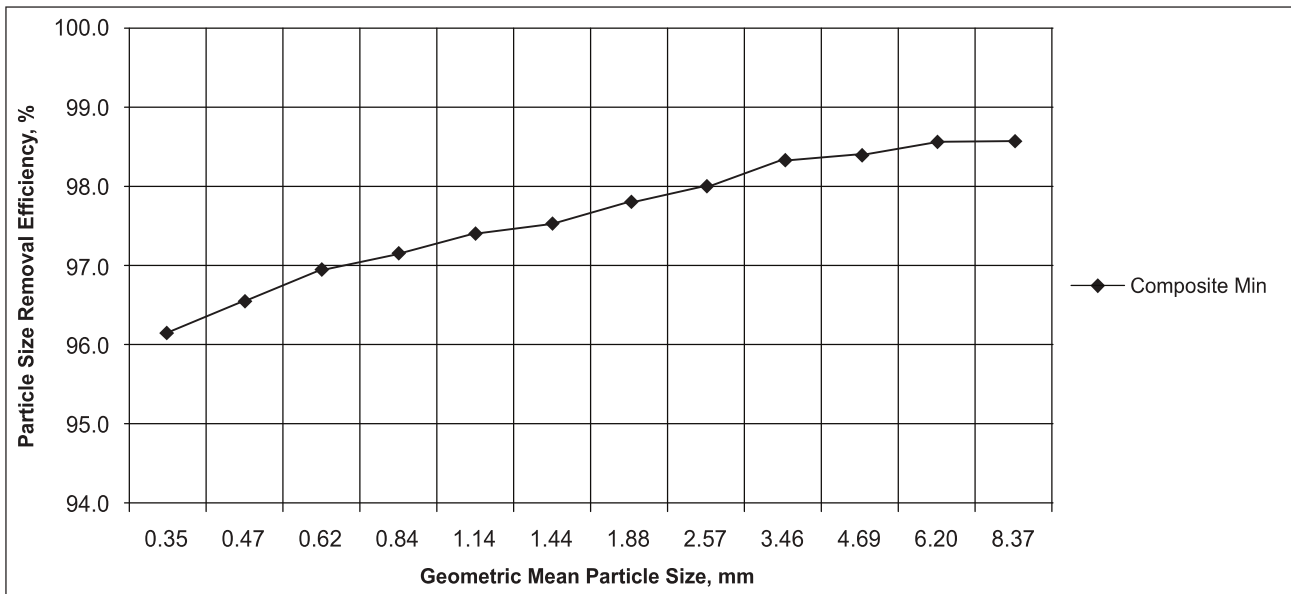
**Table 1: Resistance of Clean Device vs. Airflow**



Graph 2: PSE After Incremental Dust Loading

Range Number	1	2	3	4	5	6	7	8	9	10	11	12
Size Range, $\mu\text{m}$	0.30-0.40	0.40-0.55	0.55-0.70	0.70-1.00	1.00-1.30	1.30-1.60	1.60-2.20	2.20-3.00	3.00-4.00	4.00-5.50	5.50-7.00	7.00-10.00
Geometric Mean Particle Size, $\mu\text{m}$	0.35	0.47	0.62	0.84	1.14	1.44	1.88	2.57	3.46	4.69	6.20	8.37
Initial	96.3	97.6	98.3	98.7	98.9	99.1	99.2	99.3	99.4	99.3	99.5	99.5
1st Loading	96.7	97.6	98.1	98.5	98.8	98.9	99.1	99.1	99.3	99.4	99.5	99.9
2nd Loading	97.7	98.0	98.1	98.3	98.4	98.4	98.7	98.8	98.9	99.0	98.7	98.8
3rd Loading	96.6	97.4	97.5	97.8	97.9	98.2	98.4	98.5	98.5	98.8	99.4	99.0
4th Loading	96.7	97.0	97.2	97.3	97.6	97.9	97.9	98.0	98.4	98.4	98.6	99.1
5th Loading	96.2	96.6	97.0	97.2	97.4	97.5	97.8	98.2	98.3	98.8	98.7	98.6
Composite Minimum	96.2	96.6	97.0	97.2	97.4	97.5	97.8	98.0	98.3	98.4	98.6	98.6

Table 2: Particle Size Efficiency



Graph 3: Composite Minimum Efficiency Curve



**ETL SEMKO**

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Order No. 3098477

Date: June 7, 2006  
Revised: July 31, 2006

**REPORT NO. 3098477-001a**

**TEST OF ONE  
IQAIR PERFECT 16 ID-2530  
AIR FILTER**

**RENDERED TO**

**IQAIR NORTH AMERICA, INC  
10440 ONTIVEROS PLACE, UNIT 1  
SANTA FE SPRINGS, CA 90670**

**General**

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Testing was authorized by signed quote 20286199.

**Identification of Test Specimen**

The filter tested was designated as one IQAir Perfect 16 ID-2530 air filter. A description is included in the data section on page four of this report.

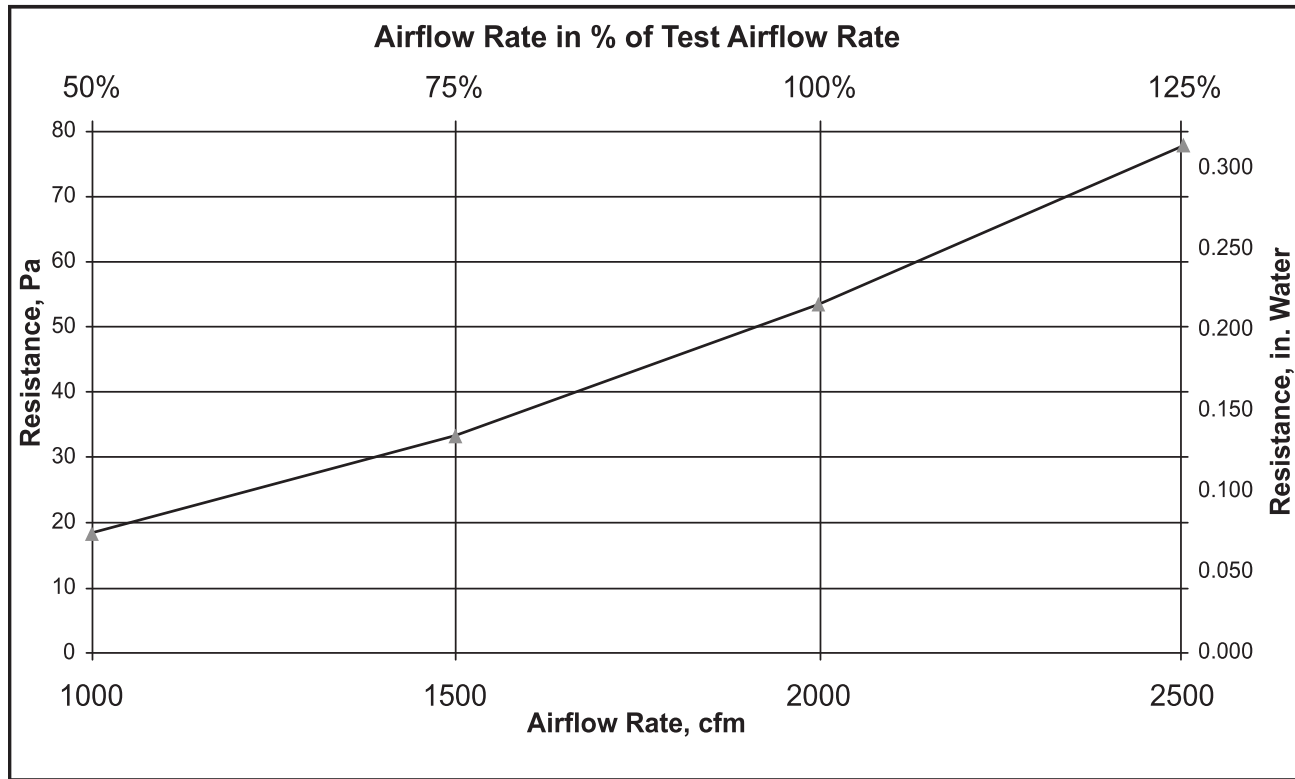
**Method of Test**

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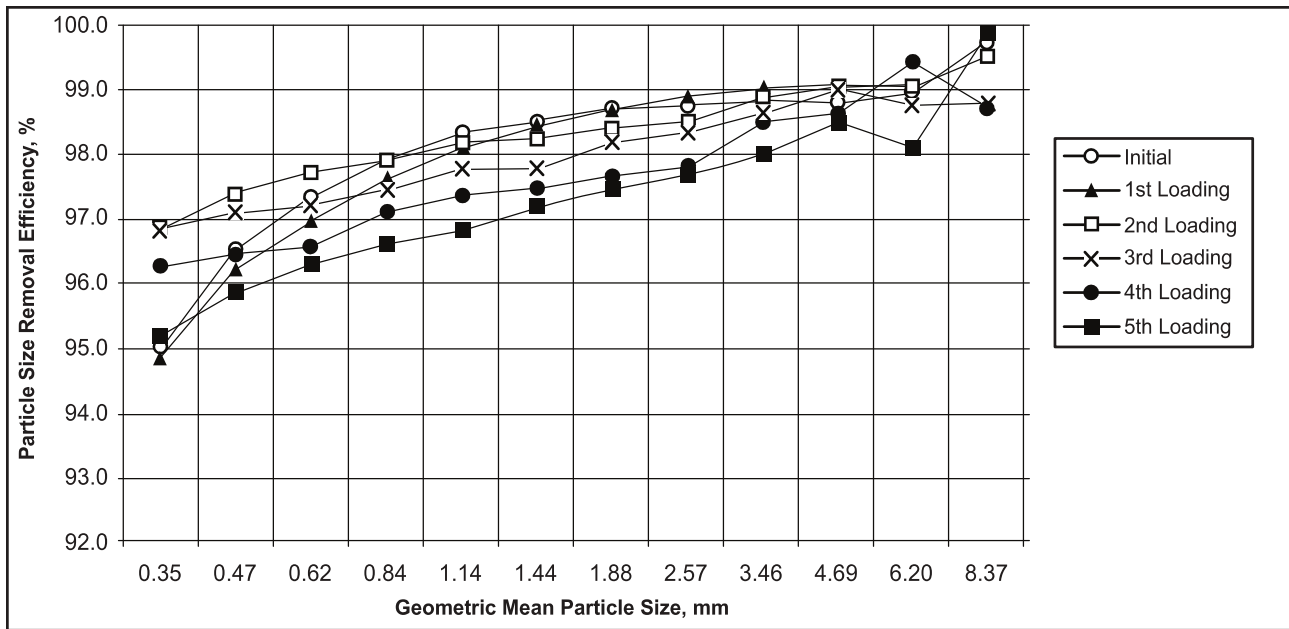
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Graph 1: Resistance of Clean Device vs. Airflow

Airflow Rate in % of Test Airflow Rate	Air Velocity		Airflow Rate		Resistance	
	m/s	fpm	m <sup>3</sup> /s	cfm	Pa	in H <sub>2</sub> O
50%	1.25	246.0	0.47	1000	18	0.073
75%	1.87	369.0	0.71	1500	33	0.134
100%	2.50	492.0	0.94	2000	54	0.215
125%	3.12	615.0	1.18	2500	78	0.313

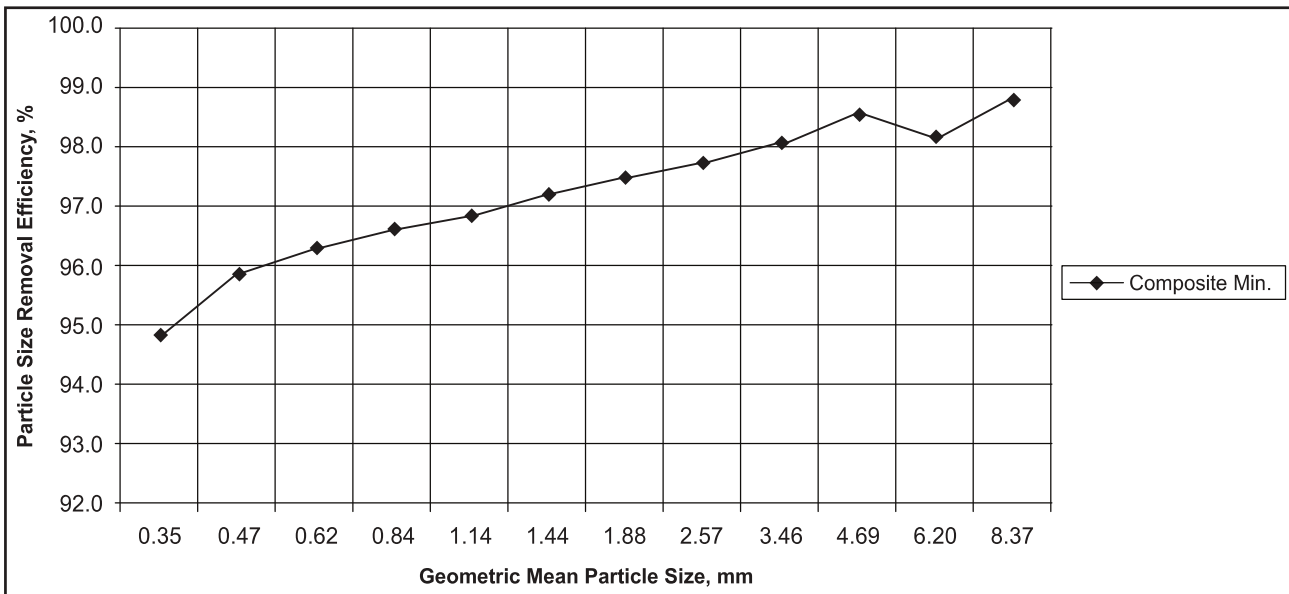
Table 1: Resistance of Clean Device vs. Airflow



Graph 2: PSE After Incremental Dust Loading

Range Number	1	2	3	4	5	6	7	8	9	10	11	12
Size Range, $\mu\text{m}$	0.30-0.40	0.40-0.55	0.55-0.70	0.70-1.00	1.00-1.30	1.30-1.60	1.60-2.20	2.20-3.00	3.00-4.00	4.00-5.50	5.50-7.00	7.00-10.00
Geometric Mean Particle Size, $\mu\text{m}$	0.35	0.47	0.62	0.84	1.14	1.44	1.88	2.57	3.46	4.69	6.20	8.37
Initial	95.0	96.5	97.3	97.9	98.3	98.5	98.7	98.8	98.8	98.8	99.0	99.7
1st Loading	94.9	96.2	97.0	97.6	98.1	98.4	98.7	98.9	99.0	99.1	99.0	99.5
2nd Loading	96.8	97.4	97.7	97.9	98.2	98.3	98.4	98.5	98.9	99.1	99.1	99.5
3rd Loading	96.8	97.1	97.2	97.5	97.8	97.8	98.2	98.4	98.7	99.0	98.8	98.8
4th Loading	96.3	96.5	96.6	97.1	97.4	97.5	97.7	97.8	98.5	98.7	99.4	98.7
5th Loading	95.2	95.9	96.3	96.6	96.8	97.2	97.5	97.7	98.0	98.5	98.1	99.9
Composite Minimum	94.9	95.9	96.3	96.6	96.8	97.2	97.5	97.7	98.0	98.5	98.1	98.7

Table 2: Particle Size Efficiency



Graph 3: Composite Minimum Efficiency Curve



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## ASHRAE 52.2-1999 Air Cleaner Performance Report Summary

Operator: *Whaetley, Hammond, Mrozowski*  
Supervisor: *J. Allen*

Test Date: *July 31, 2006*  
Report Number: *3098477-001a*  
Order Number: *3098477*  
Revised: *July 31, 2006*

### Device Manufacturer's Data

Manufacturer: *IQ Air*  
Device Model Designation: *IQAir Perfect 16 ID-2530*  
Test Requested By: *IQAir North America, Inc.*  
Sample Obtained From: *supplied by client*

### Catalog Ratings

Airflow Rate: *Not specified*  
Initial Pressure Drop: *Not specified*

### Specified Test Conditions

Airflow Rate: *492 fpm (2000 cfm)*  
Final Pressure Drop: *349 Pa (1.40 "w.g.)*

### Device Description

Height: *22 1-2 inches*                      Width: *26 inches*                      Depth: *17 1/2 inches*  
Generic Name: *Air Filter*  
Media Type: *Synthetic*                      Approx. Media Area: *21170 square feet*  
Media Color: *white*                      Adhesive Present?: *no*  
Other Attributes: *V-bank with four extended surface panel filters in metal housing*

### Test Conditions

Airflow Velocity: *492 fpm ( 2000 cfm)*  
Temperature Range: *66-68 degF*                      RH% Range: *29-44 %*  
Test Aerosol Type : *KCl*  
Final Pressure Drop: *349 Pa (1.40"w.g.)*  
Remarks:

### Resistance Test Results

Initial Resistance: *54 Pa (0.22 "w.g.)*                      Final Resistance: *349 Pa (1.40 "w.g.)*

### Minimum Efficiency Reporting Data

Composite Average Efficiencies: *E1=95.9%, E2=97.3%, E3=98.3%*  
MERV 1-4 Air Cleaner Average Arrestance per Std. 52.1: *Not tested*  
Minimum Efficiency Reporting Value (MERV): *MERV 16@492 fpm*

Report Prepared By:

*Nick Mrozowski*  
Technician

Report Approved By:

*Nick Mrozowski*  
Air Quality