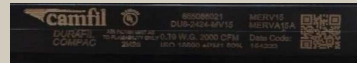


## ASHRAE 52.2-2017 Test Results w/Appendix J Results

| Filter Description |          |                           |          |                |                               |           |
|--------------------|----------|---------------------------|----------|----------------|-------------------------------|-----------|
| Manufacturer       |          | Filter Model              |          |                | Filter Part Number            |           |
| Camfil USA         |          | DU6-2424-MV15             |          |                | 855086031                     |           |
| Filter Type        |          | Media Type                |          |                | Media Color                   |           |
| V-Bed              |          | Glass Microfiber/Wet Laid |          |                | White                         |           |
| Nominal Size       |          | Actual Size               |          |                |                               |           |
| HxWxD              | Hgt (in) | Wid (in)                  | Dep (in) | Pleats/Pockets | Media Area (ft <sup>2</sup> ) | UL Rating |
| 24x24x6            | 23.38    | 23.38                     | 6.00     | 5              | 118.0                         | Yes       |

| ASHRAE 52.2-2017                                                                    |          |                                                                                     |              | ASHRAE 52.2-2017 w/App J                                                             |          |                                                                                       |              |
|-------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------|--------------|--------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------|--------------|
| Test Report:                                                                        |          | 220613_3512                                                                         |              | Test Report:                                                                         |          | 220610_3511                                                                           |              |
| Time:                                                                               | 09:55:13 | Date:                                                                               | Jun 13, 2022 | Time:                                                                                | 09:50:24 | Date:                                                                                 | Jun 10, 2022 |
| Test Data                                                                           |          | Test Results                                                                        | Rated Values | Test Data                                                                            |          | Test Results                                                                          | Rated Values |
| AirFlow (cfm)                                                                       |          | 2001                                                                                | 2001         | AirFlow (cfm)                                                                        |          | 2001                                                                                  | 2001         |
| Nominal Vel (fpm)                                                                   |          | 500                                                                                 | 501          | Nominal Vel (fpm)                                                                    |          | 500                                                                                   | 501          |
| Initial ΔP (inWG)                                                                   |          | 0.78                                                                                | 0.79         | Initial ΔP (inWG)                                                                    |          | 0.79                                                                                  | 0.79         |
| MERV                                                                                |          | 15                                                                                  | 15 @2001cfm  | MERV-A                                                                               |          | 15A                                                                                   | 15A @2001cfm |
| E <sub>1</sub> (0.3-1.0μm), (%)                                                     |          | 87                                                                                  | ≥ 85         | E <sub>1</sub> -A (0.3-1.0μm), (%)                                                   |          | 87                                                                                    | ≥ 85         |
| E <sub>2</sub> (1.0-3.0μm), (%)                                                     |          | 99                                                                                  | ≥ 90         | E <sub>2</sub> -A (1.0-3.0μm), (%)                                                   |          | 98                                                                                    | ≥ 90         |
| E <sub>3</sub> (3.0-10μm), (%)                                                      |          | 100                                                                                 | ≥ 95         | E <sub>3</sub> -A (3.0-10μm), (%)                                                    |          | 99                                                                                    | ≥ 95         |
| Final DP, (inWG)                                                                    |          | 1.5                                                                                 | 1.5          | Final DP, (inWG)                                                                     |          | 1.5                                                                                   | 1.5          |
| Arrestance, (%)                                                                     |          | 100                                                                                 | 99           | Arrestance-A, (%)                                                                    |          | 99                                                                                    | 99           |
| DHC, (g)                                                                            |          | 134                                                                                 |              | DHC-A, (g)                                                                           |          | 142                                                                                   |              |
| Temp, (F)                                                                           | 73       | Test Aerosol                                                                        | KCL          | Temp, (F)                                                                            | 73       | Test Aerosol                                                                          | KCL          |
| RH, (%)                                                                             | 51       | Loading Dust                                                                        | ASHRAE       | RH, (%)                                                                              | 51       | Loading Dust                                                                          | ASHRAE       |
|  |          |  |              |  |          |  |              |
| 52.2 Test Filter and Label Photos                                                   |          |                                                                                     |              | App J Test Filter and Label Photos                                                   |          |                                                                                       |              |
| Comment                                                                             |          |                                                                                     |              | Comment                                                                              |          |                                                                                       |              |
| Certified Test Per ASHRAE 52.2-2017                                                 |          |                                                                                     |              | Operator                                                                             |          |                                                                                       |              |
| Approval: Michael Krause, Laboratories and Materials R&D Manager                    |          |                                                                                     |              | Mirna Montoya                                                                        |          | Particle Counter                                                                      |              |
|                                                                                     |          |                                                                                     |              | TSI                                                                                  |          | Model                                                                                 |              |
|                                                                                     |          |                                                                                     |              |                                                                                      |          | OPS-3330                                                                              |              |

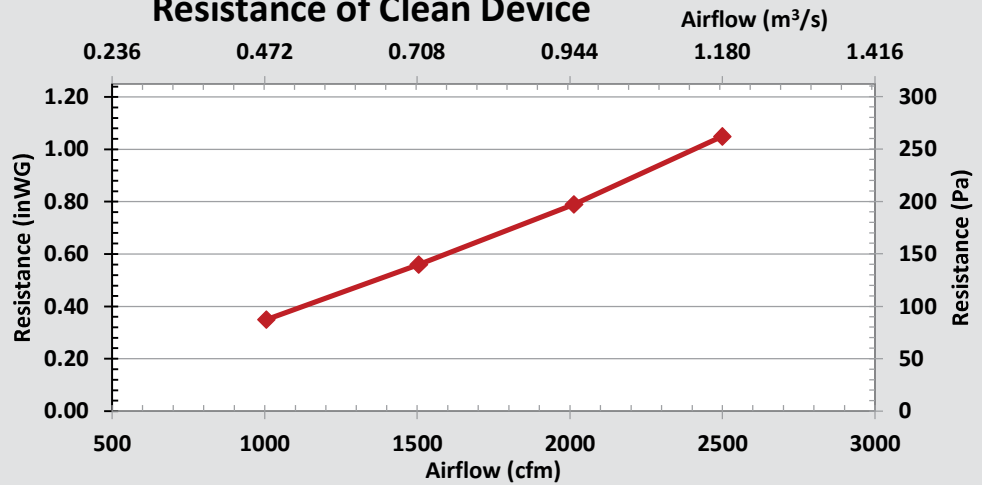
## ASHRAE 52.2-2017 Test Results

|              |               |                    |             |
|--------------|---------------|--------------------|-------------|
| Date:        | Jun 06, 2022  | Test Report:       | 220613_3512 |
| Manufacturer | Filter Model  | Filter Part Number |             |
| Camfil USA   | DU6-2424-MV15 | 855086031          |             |

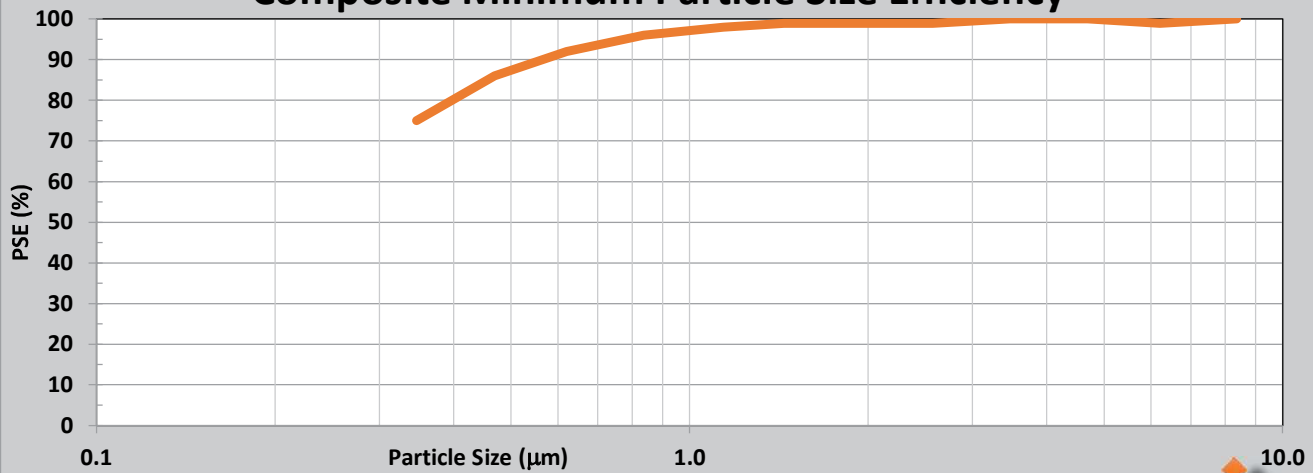
**Clean Resistance Table**

| cfm               | inWG |
|-------------------|------|
| 1005              | 0.35 |
| 1504              | 0.56 |
| 2013              | 0.79 |
| 2499              | 1.05 |
| m <sup>3</sup> /s | Pa   |
| 0.474             | 87   |
| 0.710             | 139  |
| 0.950             | 197  |
| 1.179             | 262  |

**Resistance of Clean Device**



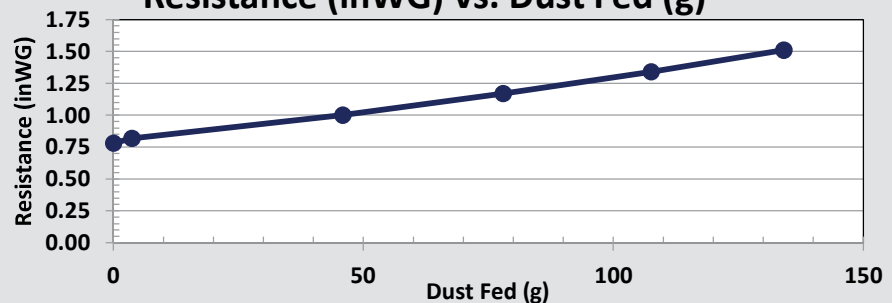
**Composite Minimum Particle Size Efficiency**



**ΔP (inWG) vs. Dust Fed (g)**

| ΔP (inWG) | Dust Fed (g) |
|-----------|--------------|
| 0.78      | 0            |
| 0.82      | 4            |
| 1.00      | 46           |
| 1.17      | 78           |
| 1.34      | 108          |
| 1.51      | 134          |

**Resistance (inWG) vs. Dust Fed (g)**



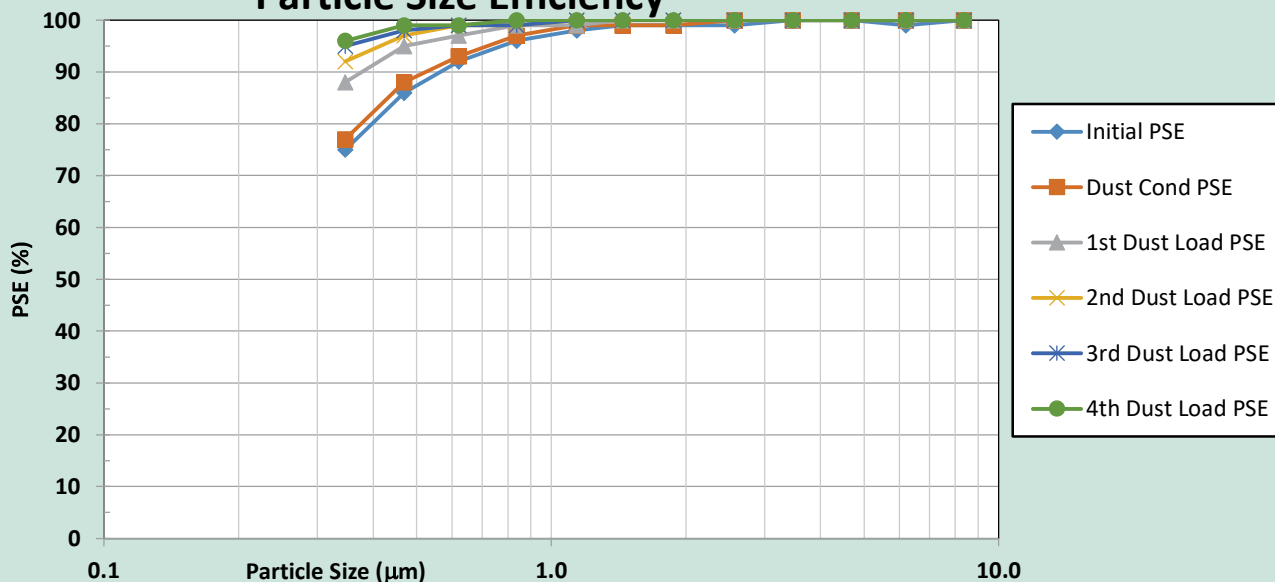


Camfil USA  
1 North Corporate Drive  
Riverdale, NJ 07457  
(973) 616-7300

## ASHRAE 52.2-2017 Test Results

|                       |              |      |      |               |      |             |      |      |                    |      |      |      |
|-----------------------|--------------|------|------|---------------|------|-------------|------|------|--------------------|------|------|------|
| Date:                 | Jun 06, 2022 |      |      | Test Report:  |      | 220613_3512 |      |      |                    |      |      |      |
| Manufacturer          |              |      |      | Filter Model  |      |             |      |      | Filter Part Number |      |      |      |
| Camfil USA            |              |      |      | DU6-2424-MV15 |      |             |      |      | 855086031          |      |      |      |
| Efficiency Data Table |              |      |      |               |      |             |      |      |                    |      |      |      |
|                       | 1            | 2    | 3    | 4             | 5    | 6           | 7    | 8    | 9                  | 10   | 11   | 12   |
| Minimum Dia (µm)      | 0.3          | 0.4  | 0.55 | 0.7           | 1.0  | 1.3         | 1.6  | 2.2  | 3.0                | 4.0  | 5.5  | 7.0  |
| Maximum Dia (µm)      | 0.4          | 0.55 | 0.7  | 1.0           | 1.3  | 1.6         | 2.2  | 3.0  | 4.0                | 5.5  | 7.0  | 10.0 |
| Geometric Mean (µm)   | 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 PSE           | 75           | 86   | 92   | 96            | 98   | 99          | 99   | 99   | 100                | 100  | 99   | 100  |
| Dust Cond PSE         | 77           | 88   | 93   | 97            | 99   | 99          | 99   | 100  | 100                | 100  | 100  | 100  |
| 1st Dust Load PSE     | 88           | 95   | 97   | 99            | 99   | 100         | 100  | 100  | 100                | 100  | 100  | 100  |
| 2nd Dust Load PSE     | 92           | 97   | 99   | 99            | 100  | 100         | 100  | 100  | 100                | 100  | 100  | 100  |
| 3rd Dust Load PSE     | 95           | 98   | 99   | 99            | 100  | 100         | 100  | 100  | 100                | 100  | 100  | 100  |
| 4th Dust Load PSE     | 96           | 99   | 99   | 100           | 100  | 100         | 100  | 100  | 100                | 100  | 100  | 100  |
| Composite Min PSE     | 75           | 86   | 92   | 96            | 98   | 99          | 99   | 99   | 100                | 100  | 99   | 100  |

Particle Size Efficiency



All testing is performed in compliance with the latest revision of ASHRAE Standard 52.2 in a state-of-the-art laboratory facility located at the Camfil USA headquarters in Riverdale, NJ. For more information, contact your local Camfil representative or distributor.

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|                      |      |      |      |      |      |      |      |      |      |  |  |  |
|----------------------|------|------|------|------|------|------|------|------|------|--|--|--|
| For Camfil use only: | 3512 | 9861 | 9862 | 9938 | 3511 | 9859 | 9860 | 9925 | 9901 |  |  |  |
|----------------------|------|------|------|------|------|------|------|------|------|--|--|--|



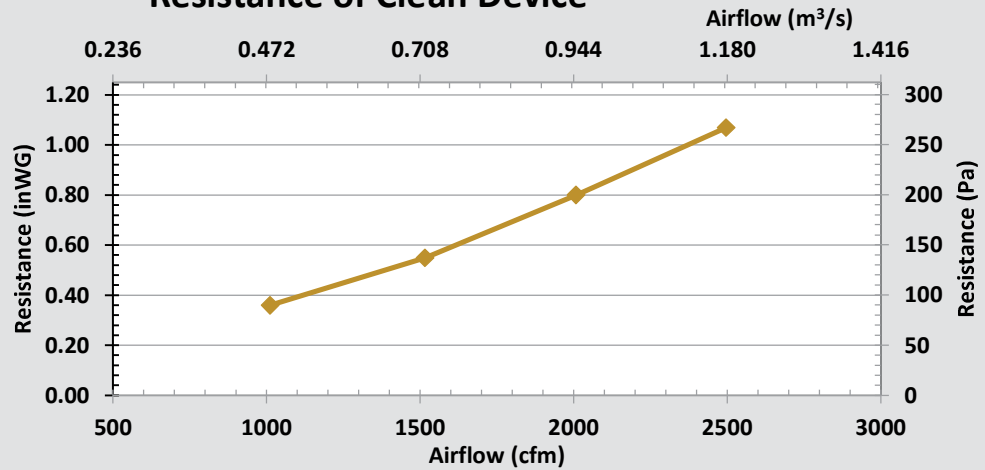
## ASHRAE 52.2-2017 Test Results w/Appendix J Results

|              |            |                    |               |
|--------------|------------|--------------------|---------------|
| Date:        | 06/06/2022 | Test Number:       | 220610_3511   |
| Manufacturer | Camfil USA | Filter Model       | DU6-2424-MV15 |
|              |            | Filter Part Number | 855086031     |

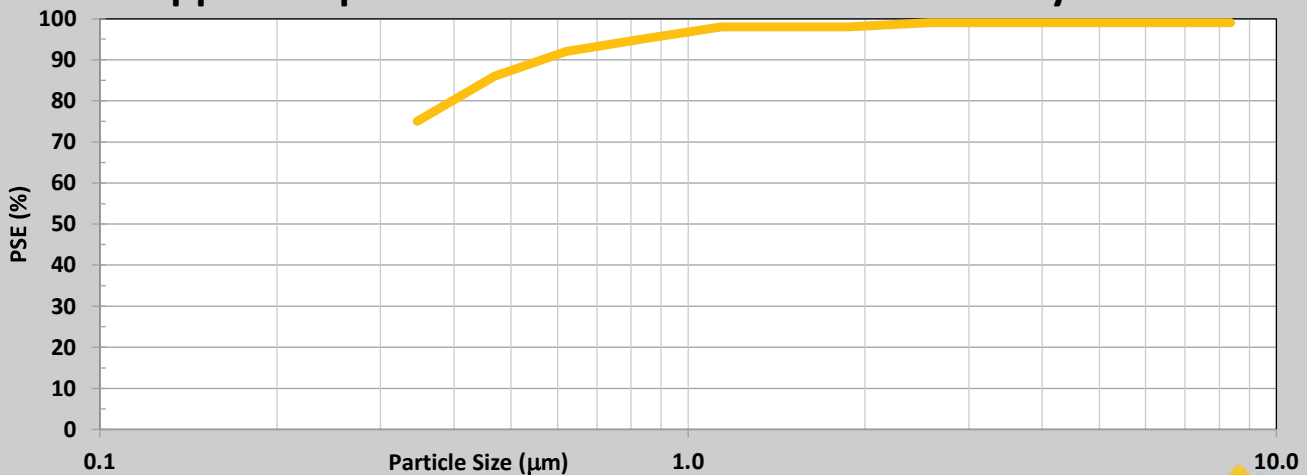
**Clean Resistance Table**

| cfm               | inWG |
|-------------------|------|
| 1012              | 0.36 |
| 1516              | 0.55 |
| 2008              | 0.80 |
| 2497              | 1.07 |
| m <sup>3</sup> /s | Pa   |
| 0.478             | 90   |
| 0.715             | 137  |
| 0.948             | 199  |
| 1.178             | 267  |

**Resistance of Clean Device**

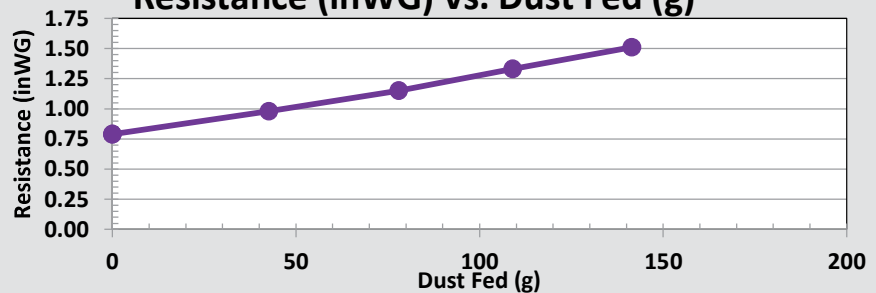


**App J Composite Minimum Particle Size Efficiency**



| ΔP (inWG) | Dust Fed (g) |
|-----------|--------------|
| 0.79      | 0            |
| 0.79      | 0            |
| 0.98      | 43           |
| 1.15      | 78           |
| 1.33      | 109          |
| 1.51      | 142          |

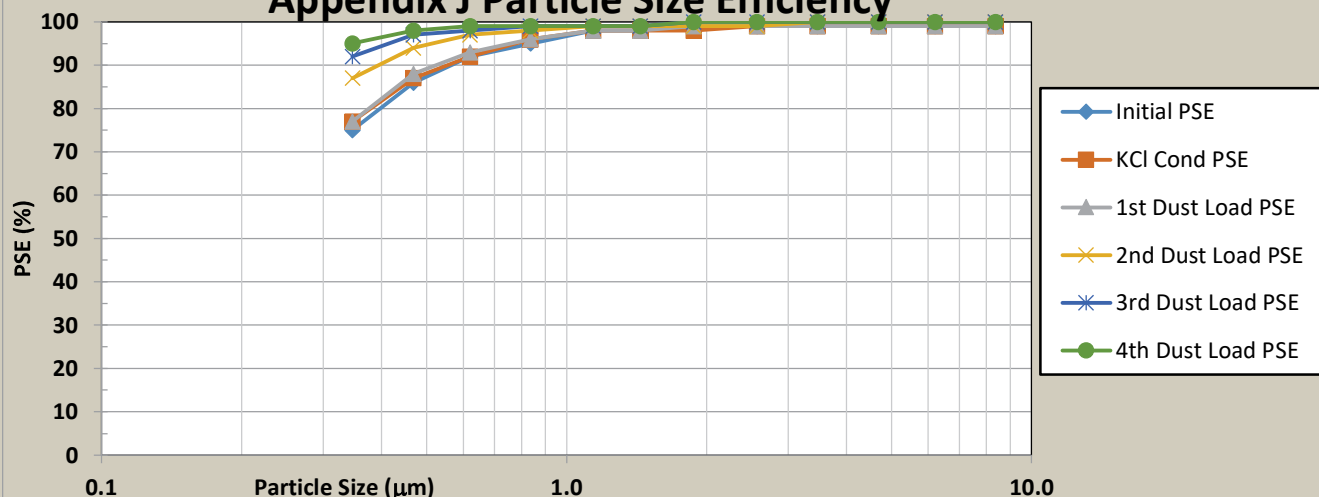
**Resistance (inWG) vs. Dust Fed (g)**



## ASHRAE 52.2-2017 Test Results w/Appendix J Results

|                                |                     |      |      |               |      |      |             |      |      |                    |      |      |      |
|--------------------------------|---------------------|------|------|---------------|------|------|-------------|------|------|--------------------|------|------|------|
| Date:                          | 06/06/2022          |      |      | Test Number:  |      |      | 220610_3511 |      |      |                    |      |      |      |
| Manufacturer                   |                     |      |      | Filter Model  |      |      |             |      |      | Filter Part Number |      |      |      |
| Camfil USA                     |                     |      |      | DU6-2424-MV15 |      |      |             |      |      | 855086031          |      |      |      |
| App J Efficiency<br>Data Table |                     |      |      |               |      |      |             |      |      |                    |      |      |      |
|                                | 1                   | 2    | 3    | 4             | 5    | 6    | 7           | 8    | 9    | 10                 | 11   | 12   |      |
|                                | Minimum Dia (µm)    | 0.3  | 0.4  | 0.55          | 0.7  | 1.0  | 1.3         | 1.6  | 2.2  | 3.0                | 4.0  | 5.5  | 7.0  |
|                                | Maximum Dia (µm)    | 0.4  | 0.55 | 0.7           | 1.0  | 1.3  | 1.6         | 2.2  | 3.0  | 4.0                | 5.5  | 7.0  | 10.0 |
|                                | Geometric Mean (µm) | 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 PSE         | 75   | 86   | 92            | 95   | 98   | 98          | 99   | 99   | 99                 | 99   | 99   | 99   |
|                                | KCl Cond PSE        | 77   | 87   | 92            | 96   | 98   | 98          | 98   | 99   | 99                 | 99   | 99   | 99   |
|                                | 1st Dust Load PSE   | 77   | 88   | 93            | 96   | 98   | 98          | 99   | 99   | 99                 | 99   | 99   | 99   |
|                                | 2nd Dust Load PSE   | 87   | 94   | 97            | 98   | 99   | 99          | 99   | 99   | 100                | 100  | 100  | 100  |
|                                | 3rd Dust Load PSE   | 92   | 97   | 98            | 99   | 99   | 99          | 100  | 100  | 100                | 100  | 100  | 100  |
|                                | 4th Dust Load PSE   | 95   | 98   | 99            | 99   | 99   | 99          | 100  | 100  | 100                | 100  | 100  | 100  |
|                                | Composite Min PSE   | 75   | 86   | 92            | 95   | 98   | 98          | 98   | 99   | 99                 | 99   | 99   | 99   |

### Appendix J Particle Size Efficiency



|                                                           |                                                    |                                    |                                                     |            |
|-----------------------------------------------------------|----------------------------------------------------|------------------------------------|-----------------------------------------------------|------------|
| Bkg Concentration (particles/cm <sup>3</sup> )            | Avg Cond Aerosol Conc (particles/cm <sup>3</sup> ) | Cumulative Cond Duration (minutes) | Cumulative Cond CT (particles-min/cm <sup>3</sup> ) |            |
| 3820.0                                                    | 4.15E+05                                           | 177                                | 7.32E+07                                            |            |
| Large Particle Concentration (Particles/cm <sup>3</sup> ) | Ratio Small to Large (>20,000)                     | Conditioning ΔP (inWG)             |                                                     | Same duct? |
| 3                                                         | 152,855                                            | Initial ΔP                         | Final ΔP                                            | KCl Rig    |
|                                                           |                                                    | 0.65                               | 0.67                                                |            |

## ASHRAE 52.2-2017 Test Results w/Appendix J Results

|                                |                     |      |      |               |      |      |             |      |      |                    |      |      |      |
|--------------------------------|---------------------|------|------|---------------|------|------|-------------|------|------|--------------------|------|------|------|
| Date:                          | 06/06/2022          |      |      | Test Number:  |      |      | 220610_3511 |      |      |                    |      |      |      |
| Manufacturer                   |                     |      |      | Filter Model  |      |      |             |      |      | Filter Part Number |      |      |      |
| Camfil USA                     |                     |      |      | DU6-2424-MV15 |      |      |             |      |      | 855086031          |      |      |      |
| KCI Conditioning<br>Data Table |                     |      |      |               |      |      |             |      |      |                    |      |      |      |
|                                | 1                   | 2    | 3    | 4             | 5    | 6    | 7           | 8    | 9    | 10                 | 11   | 12   |      |
|                                | Minimum Dia (µm)    | 0.3  | 0.4  | 0.55          | 0.7  | 1.0  | 1.3         | 1.6  | 2.2  | 3.0                | 4.0  | 5.5  | 7.0  |
|                                | Maximum Dia (µm)    | 0.4  | 0.55 | 0.7           | 1.0  | 1.3  | 1.6         | 2.2  | 3.0  | 4.0                | 5.5  | 7.0  | 10.0 |
|                                | Geometric Mean (µm) | 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 PSE         | 75   | 86   | 92            | 95   | 98   | 98          | 99   | 99   | 99                 | 99   | 99   | 99   |
|                                | 1st KCI Cond PSE    | 77   | 87   | 92            | 96   | 98   | 98          | 98   | 99   | 99                 | 99   | 99   | 99   |
|                                | 2nd KCI Cond PSE    |      |      |               |      |      |             |      |      |                    |      |      |      |
|                                | 3rd KCI Cond PSE    |      |      |               |      |      |             |      |      |                    |      |      |      |
|                                | 4th KCI Cond PSE    |      |      |               |      |      |             |      |      |                    |      |      |      |
|                                | 5th KCI Cond PSE    |      |      |               |      |      |             |      |      |                    |      |      |      |
|                                | Final KCI Cond PSE  | 77   | 87   | 92            | 96   | 98   | 98          | 98   | 99   | 99                 | 99   | 99   | 99   |

### KCI Conditioning Particle Size Efficiency

