



Universal Air Technology,

Universal Air Technology, Inc.
2208 NW 71st Place, Suite B
Gainesville, FL 32653
(352) 379-9630

May 14, 2001

RE: PO ID# Q03131

Mr. Gregg Burnett
Dust Free, Inc.
1112 Industrial Park Drive
P.O. Box 519
Royse City, TX 75189

Dear Gregg Burnett:

Subject: Results from Research and Development Testing

Test data from the five UV light systems specified in your purchase order are included in the attached computer files. Two of the three organisms were tested with the specified lights and only data from these two organisms is included. The attached files include: a file with general procedures used for the bioaerosol tests, a file with the data collected for the *Serratia marcescens* bioaerosol tests, a file with the data collected for the *Aspergillus niger* bioaerosol tests, and one file with data summaries for both organisms. In addition, the data summary files were added to the following two pages.

We hope you find this information useful. Please contact UAT if you need further clarification regarding the information provided. Thank you.

Best regards,
Henry Greist

Microbiologist
Universal Air Technology, Inc.
Computer File Attachments (4)



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Table 1: *Aspergillus niger* UV Performance

Aspergillus niger

UV Light Comparison

| | Date Completed | % Kill after Background Subtracted | Light Off (cfu/cu.ft.) | | | | Light On (cfu/cu.ft.) | | | |
|------------------------------|----------------|------------------------------------|------------------------|-----------------------|-----------|-------------|-----------------------|-----------------------|-----------|-------------|
| | | | Before unit | After Diffusion Plate | Reduction | % Reduction | Before unit | After Diffusion Plate | Reduction | % Reduction |
| Healthy Climate (TM) UV-2000 | 04/28/01 | 2.462 | 219.9 | 178.6 | 41.3 | -18.781 | 210.8 | 176.4 | 34.4 | -16.319 |
| Healthy Climate (TM) UV-1000 | 04/28/01 | -3.113 | 232.5 | 163.5 | 69.0 | -29.677 | 215.0 | 144.5 | 70.5 | -32.791 |
| Healthy Climate(TM) UV-500 | 04/28/01 | -6.526 | 219.2 | 182.3 | 36.9 | -16.834 | 190.5 | 146.0 | 44.5 | -23.360 |
| BioFighter Triad 1S20 | 04/29/01 | -13.413 | 200.4 | 192.3 | 8.1 | -4.042 | 211.4 | 174.5 | 36.9 | -17.455 |
| BioFighterTriad 2S20 | 04/30/01 | 3.939 | 211.4 | 155.1 | 56.3 | -26.632 | 212.4 | 164.2 | 48.2 | -22.693 |

| | Lights Off | | | | | Lights On | | | | |
|------------------------------|------------|-------|-----------------------|-------------------------|-----------------|-----------|-------|-----------------------|-------------------------|-----------------|
| | Temp. °F | R.H. | Δ P Unit (inches H2O) | Δ P Nozzle (inches H2O) | Flow Rate (CFM) | Temp. °F | R.H. | Δ P Unit (inches H2O) | Δ P Nozzle (inches H2O) | Flow Rate (CFM) |
| Healthy Climate (TM) UV-2000 | 68.81 | 50.02 | 0.019 | 0.70 | 942.5 | 69.09 | 49.84 | 0.019 | 0.70 | 942.5 |
| Healthy Climate (TM) UV-1000 | 77.02 | 44.98 | 0.021 | 0.67 | 923.9 | 78.83 | 49.84 | 0.020 | 0.67 | 923.9 |
| Healthy Climate(TM) UV-500 | 71.28 | 47.06 | 0.018 | 0.69 | 936.4 | 70.96 | 47.79 | 0.018 | 0.69 | 936.4 |
| BioFighter Triad 1S20 | 80.71 | 40.93 | 0.018 | 0.68 | 930.2 | 80.48 | 41.84 | 0.018 | 0.68 | 930.2 |
| BioFighterTriad 2S20 | 73.41 | 58.91 | 0.018 | 0.68 | 930.2 | 73.46 | 59.32 | 0.019 | 0.69 | 936.4 |

Prepared by Henry Greist for Dust Free, Inc.
5/14/01



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Table 2: *Serratia marcescens* UV Performance Data

Serratia marcescens

UV Light Comparison

| | Date Completed | % Kill from Upstream Intensity | % Kill after Background Subtracted | Light Off (cfu/cu.ft.) | | | | Light On (cfu/cu.ft.) | | | |
|------------------------------|----------------|--------------------------------|------------------------------------|------------------------|-----------------------|-----------|-------------|-----------------------|-----------------------|-----------|-------------|
| | | | | Before unit | After Diffusion Plate | Reduction | % Reduction | Before unit | After Diffusion Plate | Reduction | % Reduction |
| Healthy Climate (TM) UV-2000 | 05/03/01 | -99.480 | -100.000 | 269.0 | 138.8 | 130.2 | -48.401 | 1.4 | 0.0 | 1.4 | -100.000 |
| Healthy Climate (TM) UV-1000 | 05/02/01 | -96.893 | -100.000 | 280.0 | 245.0 | 35.0 | -12.500 | 8.7 | 0.0 | 8.7 | -100.000 |
| Healthy Climate(TM) UV-500 | 05/03/01 | -98.425 | -100.000 | 279.4 | 100.6 | 178.8 | -63.994 | 4.4 | 0.0 | 4.4 | -100.000 |
| BioFighter Triad 1S20 | 05/02/01 | -95.692 | -100.000 | 220.5 | 152.2 | 68.3 | -30.975 | 9.5 | 0.0 | 9.5 | -100.000 |
| BioFighterTriad 2S20 | 05/02/01 | -99.049 | -100.000 | 273.5 | 166.5 | 107.0 | -39.122 | 2.6 | 0.0 | 2.6 | -100.000 |

| | Temp. °F | R.H. | Δ P Unit (inches H2O) | Δ P Nozzle | Flow Rate (CFM) |
|------------------------------|----------|-------|-----------------------|------------|-----------------|
| Healthy Climate (TM) UV-2000 | 72.06 | 69.23 | 0.021 | 0.70 | 942.5 |
| Healthy Climate (TM) UV-1000 | 75.54 | 66.85 | 0.020 | 0.68 | 930.2 |
| Healthy Climate(TM) UV-500 | 75.47 | 60.75 | 0.020 | 0.68 | 930.2 |
| BioFighter Triad 1S20 | 77.21 | 63.05 | 0.020 | 0.68 | 930.2 |
| BioFighterTriad 2S20 | 79.43 | 54.19 | 0.020 | 0.68 | 930.2 |

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