

## CASE STUDY

### Indoor Environmental Quality Report Scottsdale, AZ Elementary School – Third Party Validation of PuriFi IQ Generators



## Executive Summary:

Environmental testing was conducted at a Scottsdale, Arizona elementary school to evaluate improvements in Indoor Environmental Quality (IEQ) following the installation of **PuriFi IQ cold plasma ionization technology**.

Testing and analysis were independently performed by **Advanced Energy Efficiency & Environmental Quality, LLC\***, using industry-recognized protocols to compare pre-installation baseline conditions with post-treatment results across multiple classrooms. The study demonstrated significant reductions in airborne particulates, bacteria, fungi, and mold spores, validating the measurable health and wellness benefits of PuriFi's technology in educational settings.

## Methodology:

### Sampling Locations:

- Baseline testing: Classrooms 6, 20, 25, 27, 29, 31
- Post-treatment testing: Classrooms 206, 212, 229

### Parameters Measured:

- Airborne particulate matter concentrations
- Culturable airborne bacteria
- Surface bacterial samples
- Culturable airborne fungal samples
- Total airborne mold spores
- Volatile Organic Compounds (VOCs)
- Formaldehyde
- Carbon Monoxide (CO)
- Carbon Dioxide (CO<sub>2</sub>)
- Comfort parameters: temperature & relative humidity



Measurements were collected under real operating conditions. Some rooms were fully occupied, while others were partially occupied or vacant, allowing testing under varied real-world conditions.

**\*Advanced Energy Efficiency & Environmental Quality, LLC** is a licensed Arizona contractor and DOE Zero Energy Ready Home verifier, specializing in energy code compliance, building performance testing, and indoor environmental quality assessments.

## Results & Key Findings:

### Airborne & Surface Contaminants

- **Airborne particulate matter:** 71% reduction
- **Airborne culturable bacteria:** 29% / 53%\* reduction
- **Surface bacterial samples:** 78% reduction
- **Culturable airborne fungi:** 95% reduction
- **Total airborne mold spores:** 78% reduction

*(\*) When outlier Room 27 (high foot traffic at time of sampling) is excluded, the reduction increases to 53%*

### **Conclusion:**

*Even in rooms with high occupancy during sampling, overall contaminant levels were consistently lower following installation of PuriFi IQ technology.*

### **Other Notes:**

#### **Aerosolized Chemicals**

- Elevated VOC levels detected in Room 105 (Work Room).
- Formaldehyde meter readings were high in Room 126 but likely represented false positives due to interference from alcohol-based cleaning products or dry-erase markers. Concentrations decreased rapidly during testing.

#### **Comfort Parameters**

Temperature and humidity remained stable and unaffected by the air purification systems. Ion distribution occasionally increased HVAC air circulation, but comfort was not impacted when temperature and humidity stayed within optimal ranges.



## Implications for Schools

The independent testing confirms that **PuriFi IQ technology deliver measurable improvements in classroom air quality**, reducing exposure to particulates, bacteria, fungi, and mold spores that can negatively affect student health, absenteeism, and performance.

### **Key takeaways for school administrators and facility managers:**

- **Validated Results:** Third-party testing demonstrates reductions of **70%–95% across critical Indoor Environmental Quality parameters.**
- **Health & Safety:** Cleaner air supports healthier learning environments, fewer illness-related absences, and improved well-being for students and staff.
- **Scalable & Non-Disruptive:** Units integrate directly with existing HVAC systems and operate automatically without interfering with comfort.
- **Regulatory Alignment:** Results align with growing regulatory focus on healthy schools and federal/state funding initiatives for indoor air quality improvements.

## Conclusion

The Scottsdale elementary school study provides strong third-party evidence that **PuriFi's cold plasma air purification technology delivers significant, quantifiable benefits in real-world classroom environments.**

With reductions of up to **95% in airborne fungi, 78% in mold spores, and 71% in particulates**, PuriFi IQ technology represent a proven, science-backed solution to create **safer, healthier learning spaces for children and educators.**

✦ *For more information on PuriFi solutions for schools and other environments, visit [www.PuriFiLabs.com](http://www.PuriFiLabs.com)*

