



Decarbonization Efficacy of AIRPHX Commercial Induct Unit¹

Set forth below is AIRPHX's methodology to support its conclusion that the AIRPHX IDU 250k is able to remove 20 metric tons or more of carbon dioxide (CO₂) per year when installed in ductwork with an airflow rate of 2,000 cubic feet per minute (cfm).

The plasma field created by AIRPHX technology creates electrons with a high energy level that are excellent at breaking the carbon – oxygen bonds in carbon dioxide. The amount of CO₂ broken down by AIRPHX in a year is a function of two variables: 1) the amount of CO₂ exposed to the unit over the course of a year; and 2) the efficacy at which the AIRPHX unit breaks down the CO₂.

Determining Amount of CO₂ Exposed to AIRPHX Technology in a Year of Operations

- Concentration of CO₂ in ambient air \approx 420 ppm [0.042%]²
- Weight of one cubic foot of air \approx 0.08 lbs
- CO₂ is heavier than ambient air, with the weight of CO₂ being 44/29 greater than that of ambient air
- CO₂ comprises 0.064% of the weight of ambient air [0.042% x 44/29]
- Weight of CO₂ in one cubic foot of air = 0.0000512 lbs [0.08 lbs x 0.064%]
- Weight of CO₂ exposed to AIRPHX plasma field in one minute of operations at 2,000 cubic feet per minute = 0.1024 [2,000 x 0.0000512 lbs]
- Weight of CO₂ exposed to AIRPHX plasma field in one year of operations = 53,800 lbs [0.1024 lbs x 60 x 24 x 365]
- The amount of CO₂ exposed to AIRPHX technology in a year of operating with the above assumptions = 24.4 metric tons [53,800 lbs ÷ 2,205 lbs]

Determining Efficacy of AIRPHX IDU 250k³

- Testing with a mass spectrometer in a BSL-4 laboratory confirmed 82.5% reduction of CO₂ on a single pass through the AIRPHX plasma field.⁴
- Testing by an independent BSL-2 laboratory intended to reflect real world conditions confirmed reductions of CO₂ that are consistent with an efficacy rate significantly higher than that achieved by the mass spectrometer testing of 82.5% -- likely over 95%.⁵
- AIRPHX believes the efficacy rate of breaking down CO₂ is higher than 82.5% at the airflow rate of 2,000 cfm (potentially approaching 100%). The amount of CO₂ broken down by a single AIRPHX IDU 250k unit with 2,000 cfm of airflow over the course of a year at 82.5% efficacy = 20.1 metric tons. At an efficacy rate of 95%, the amount of CO₂ broken down increases to 23.2 metric tons.

¹ We have not identified any standard methodology for determining amounts of carbon dioxide that are broken down by AIRPHX technology. This document is our good faith effort to ascertain the efficacy of an AIRPHX IDU 250k.

² The carbon dioxide level is assumed to be 420 parts per million, which is the global level of carbon dioxide. Air that is circulated through the AIRPHX unit will be a mix of recycled air from the building and outside air. The concentration of carbon dioxide in recycled air is assumed to be 420 ppm also even though ambient air in buildings tends to be significantly higher than the concentrations for outside air.

³ The efficacy of the AIRPHX units depends on a variety of factors including size and configuration of the duct work, cfm levels as well as linear feet per minute of airflow, use of dampers, concentration levels of CO₂ and other harmful gases, number of air changes per hour, etc. Actual results will vary based on the specific installation.

⁴ The efficacy improved to 100% reduction using the revised AIRPHX plasma field to be used in the industrial configuration.

⁵ This is consistent with analysis by AIRPHX confirming that efficacy of AIRPHX in breaking down CO₂ actually increases with increased airflow.