



CASE STUDY

Energy and Water Use Assessment for Hot Air Sterilizer Equipment

CPAC Equipment, Inc. (CPAC), based in Leicester, NY, manufactures Class II, dry heat sterilizers, which are used in medical, dental and ophthalmology practices for sterilizing a variety of medical instruments. CPAC produces three lines of dry heat sterilizers, including the Cox RapidHeat Transfer (CRH).

Challenge

CPAC's CRH sterilizer functions using high velocity hot air as opposed to steam, which is the methodology commonly used by hospitals and dental offices worldwide. The dry heat method employed by the CRH sterilizer does not use water and therefore eliminates steam generation and drying cycles from the process, giving it the potential to reduce energy use, water use and cycle duration relative to steam sterilizers.

CPAC requested New York State Pollution Prevention (NYSP21) to perform an independent third-party energy and water usage assessment of the CRH sterilizer, providing a comparative analysis with two conventional steam sterilizers.

Solution

NYSP21 tested and evaluated the CRH sterilizer and two commercially available table-top steam sterilizers (Units 1 & 2). The three sterilization units (CRH, Unit 1, Unit 2) were compared based on several cycle characteristics, including energy and water use per cycle and per unit mass of instruments sterilized.



Results

Once at operating temperature and standard operating conditions, the CRH sterilizer exhibited the following performance results as compared with the two steam sterilizers evaluated:

Observations

- CRH dry heat sterilization eliminated instrumental corrosion as compared with steam sterilization
- CRH sterilized small batches of instruments 3x to 6x faster using 84% less energy per cycle vs. steam sterilizers

Testimonial

"The independent, third-party study conducted by NYSP21 provided us with the scientific documentation necessary for securing government contracts and demonstrate to our present and future healthcare/dental clients that our technology is Eco-compatible. It was a pleasure working with NYSP21 and we plan to utilize their expertise in future projects."

- Nelson S. Slavik, Ph.D. President of Research and Development
CPAC Environmental Solutions™

CHALLENGE

- NYSP21 was challenged with performing an evaluation of cycle time, energy and water use

SOLUTION

- NYSP21 evaluated the CRH sterilizer and two commercially available table-top steam sterilizers

RESULTS

- CRH dry heat sterilization eliminates instrument corrosion when compared with steam sterilization
- CRH sterilized small batches of instruments 3x to 6x faster using 84% less energy per cycle vs. steam sterilizers

NYSP21 PARTNERS



10 Regional Technology Development Centers

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