

CUAES Growth Chamber Prototype

Compared to a conventional SHERER 63-10 chamber

Key features of growth chamber models

Interior space of both chambers: 10 square feet



Lighting (chambers have approximately the same light intensity)

Controls

Temperature regulation

Construction & maintenance

Sherer 63-10

16 T12 fluorescent lamps, not dimmable. Bulb life: 12,000 hours requires relamping twice as often.

Outdated analog controls

Uses refrigeration and electric heaters. Constant temperature fluctuations above and below target increase energy consumption.

Excess amount of components (e.g. ballasts, compressor, motors and fans). Components susceptible to failure; high maintenance.

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8 dimmable T5 fluorescent lamps. Bulb life: 30,000 hours.

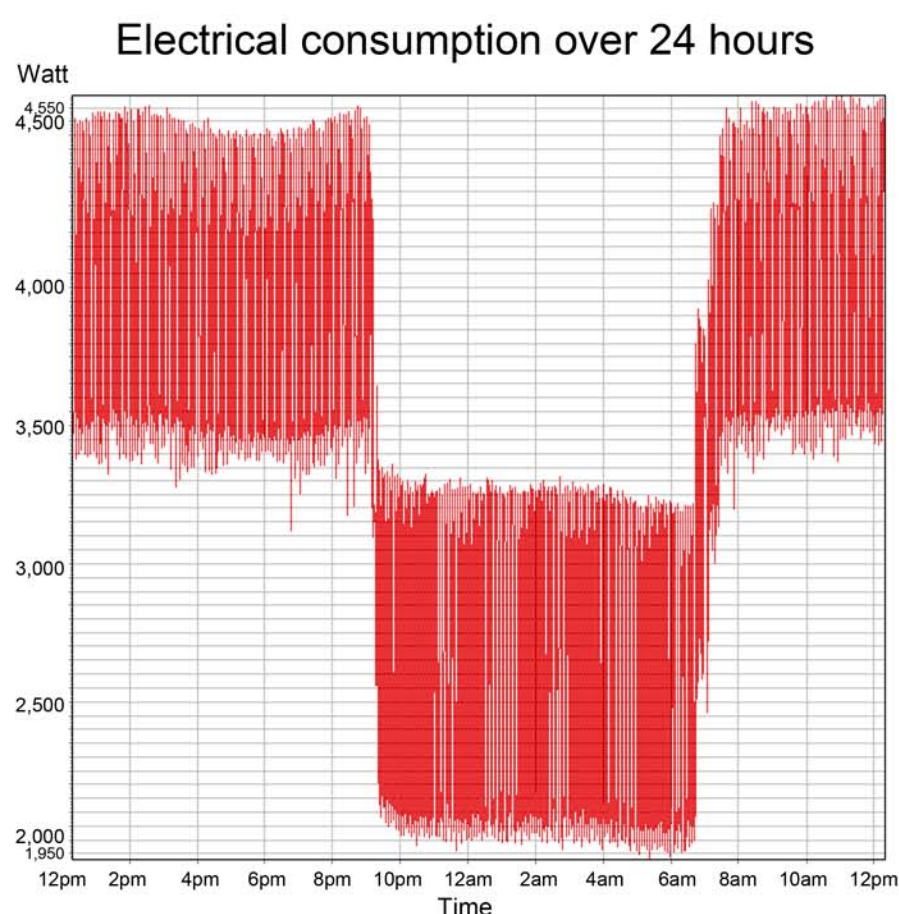
Digital Argus controls

Uses HVAC (building) hot & chilled water. Magnetic valve minimizes the amount of hot & cold water needed to precisely regulate temperature.

Streamlined engineering & design. Scalable in size. Fewer components to maintain with better accessibility; increased reliability & durability.



SHERER 63-10



Consumption & cost

At full capacity, 75°F day, 65°F night, 14 hours full light

Sherer 63-10

Electrical consumption:

Cost of electricity:

CO2 emissions:

29,917 kwh/year

\$2,095 year

22.7 tons/year

CUAES Prototype

4,634 kwh/year

\$325 year

3.5 tons/year

Savings: 85%

The outstanding versatility and reliability of the CUAES Prototype creates a superior environment for valuable research projects, while drastically reducing carbon emissions and cost of operation.

CUAES Prototype

