

The Data Center is a Green Opportunity

DATA SYSTEMS

Do you know the energy impact of your Data Center?

- Since 2000 data center energy consumption has doubled ¹
- Data centers consume 1.2% of all the electricity generated in the United States ¹
- 2005 consumption levels are equivalent to that of five 1,000-megawatt power plants ¹
- Data centers consume as much energy as television sets in the US ¹
- An estimated 1.4 lbs of CO₂ is released in the atmosphere for every kW-hr of electricity generated in the United States ³



Conserving energy in the data center is more than a cost issue; it's an environmental issue with increasing public awareness. SprayCool technology not only meets the needs of the environmentally conscious but also significantly lowers energy consumption, provides backup cooling for critical systems during power outages, requires less raised floor space, and economically increases capacity for incremental future growth.

Go Green and Improve Performance

SprayCool in your data center allows you to:

- Double computing density
- Reduce cooling power requirements by up to 40%
- Lower operating expenses
- Minimize your Carbon Footprint:
 - 1 SprayCool Rack eliminates the CO₂ equivalent of over 4 automobiles ⁴
 - 1 SprayCool rack is the same as replacing 80 CRTs with LCDs ⁵
- Utility rebates up to \$5,000+/- per SprayCool rack

Average Data Center Power Usage²

How it works

Conventional cooling of the data center relies heavily upon the refrigeration cycle. SprayCool enables direct cooling to critical microprocessors inside select server racks, which allows the SprayCool solution to efficiently take a significant portion of the server's heat and reject it straight to the facility chilled water and/or the facility condenser water loop.

A SprayCool system only requires 175w to cool 11kW, which allows for the SprayCool system to cost affectively operate on backup/redundant power ensuring power and cooling is supplied within the SprayCool rack to critical components during a power outage and/or air-handler failure.

Green Computing with SprayCool

- Better than purchasing Renewable Energy Credits
- Utility company rebates are available in many areas
- A risk-free way to lower reliance on fossil fuels
- Compliments other energy saving methods such as variable frequency drives for fans, blowers, and pumps
- Creates a usable energy waste stream for other purposes
- SprayCool is founding member of *the green grid* along with AMD, APC, Dell, IBM, HP, Sun, Rackable, VmWare, Intel, and Microsoft (www.thegreengrid.com)

¹ Jonathan G. Koomey, PhD, Staff Scientist, Lawrence Berkeley National Laboratory and Consulting Professor, Stanford University, "Estimating Total Power Consumption by Servers in the U.S. and the World" (2007)

² ACEE 2003 Paper #162; Data Centers and Energy Use

³ Unit Conversion, Emissions Factors, and Other Reference Data; U.S. Environmental Protection Agency, November, 2004

⁴ D. Austin and A. Sauer, *Changing Drivers: The Impact of Climate Change on Competitiveness and Value Creation in the Automotive Industry*. (2003)

⁵ French Energy Agency ADEME, Future Electronics Project (www.vhk.nl/fe)