



# Waterproof Energy Management for Data Center Racks



## Overview

LED solutions such as Squarebeam Elite improve efficiency, reduce heat, and ensure compliance with emergency codes. Liquid cooling and containment strategies are critical for handling AI-driven high rack densities. We offer testing and certification to help you demonstrate compliance and Marketing Claim Verification to help you build trust as you implement advanced cooling technologies and smart HVACR systems. The rise of artificial intelligence (AI) and high-performance computing (HPC) is driving data center. According to the Uptime Institute's 2011 Data Center Survey, 97% of respondents said reducing energy use was either "somewhat" or "very" important, and 87% said the primary motivation was cost reduction. As processing power has increased, so have the thermal loads these systems produce. Air cooling alone can't abate hot-running equipment. Liquid cooling for AI infrastructure enables greater efficiency across data centers and AI factories. Traditionally, data centers have relied on air cooling — where mechanical chillers circulate chilled air to absorb heat from servers, helping them maintain optimal conditions.

## Article Content

### Data center cooling efficiency | Eaton

"Close-coupled cooling allows you to focus cooling where it's needed most without lowering the temperature of the entire room," says Watkins. The modular nature of close-coupled cooling also ...

### A Guide to Data Center Cooling

Without precise thermal management, modern data centers would overheat and shut down. In this article, we'll examine how the industry is adapting to this growing challenge and how ...

### Deploying liquid cooling in the data center

By designing systems that allow users to shut off fluid flow to individual racks and individual servers, teams can continue to perform maintenance on specific sections of the data center without causing ...

### Efficient Cooling and Thermal Management for Data ...

To meet these demands, data centers are adopting advanced liquid cooling and immersion cooling technologies that offer superior thermal management and ...

### Best Practices Guide for Energy-Efficient Data Center Design

This guide provides an overview of best practices for energy-efficient data center design which spans the categories of information technology (IT) systems and their environmental conditions, data center ...

### Data Center Thermal Management Solutions

ACT offers expert guidance and purpose-built systems to manage heat throughout your data center—from dense server racks to facility-level HVAC and remote ...

### Rack-level cooling technologies for data centers - A comprehensive ...

Therefore, a systematic review is given to provide the reference for the design, operation, control, and energy efficiency improvement of the rack-level cooling system in data centers.

### 100kW+ Racks: Cabling and Liquid Cooling Design

As AI workloads push rack densities past 100 kW, data centers must master both structured cabling for data flow and liquid cooling for heat removal. ...

### NVIDIA Blackwell Platform Boosts Water Efficiency by ...

For data center and AI factory operators, this means lower operational costs, enhanced energy efficiency metrics and a future-proof ...

Data Center Physical Infrastructure: Complete Guide to Power, ...

In 2025, rising rack densities driven by AI workloads, stricter energy standards, and client expectations for zero downtime make physical infrastructure design more critical than ever.

## Contact Us

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