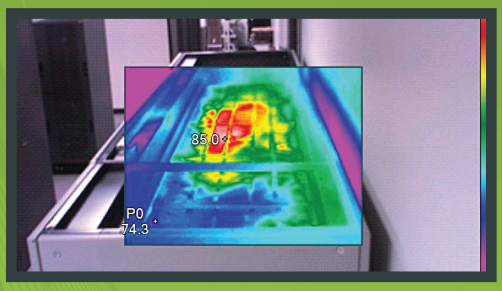
ENERGYLOK®
Case Study

"Ongoing optimization of our IT infrastructure is the be-all and end-all for us. Thanks to KoldLok we saved more than €46,000 in electricity costs this year and achieved a full return on our investment in a period of only thee months."

Matthias Koll,
Infrastructure Manager



Infrared Image of Cooling Unit Filters Showing Return Airflow Temperatures

Customer:
Amadeus

Data Center Details:
One data center, located in Germany, processes more than 8,700 end-user requests per second and over 480 million transactions resulting in more than 3 million net bookings per day.

Needs:
Recent increases in density to accommodate more capacity has made hotspots an increasingly prevalent problem. Amadeus considered whether additional cooling units would be necessary to cool the load, but sought first to solve any cooling inefficiencies before considering such a large expense.

Results:
- Achieved energy savings of €46,000 in the first year.
- Realized full return on investment in a period of just three months.
- Increases static pressure by 33% allowing set points to be lowered.
- Avoided capital outlay for additional cooling systems.

upsite technologies®

ENERGYLOK®
Case Study

Amadeus Optimizes Data Center Cooling

Founded in 1987, and headquartered in Madrid, Amadeus is the world's leading technology provider to the travel industry, providing marketing, distribution and IT services worldwide. Amadeus is not only the leading Global Distribution System (GDS) and the biggest processor of travel bookings in the world, but a leader in delivering superior technology to serve its customers' needs.

Every Amadeus customer uses its modular technology in a different way. In 217 markets worldwide, Amadeus' 155 global network airlines, 15,000 multinational travel agencies, 70,000 hotels, and over 200 tour operators depend on continuous availability to create effective commercial environments, make their business processes more efficient and give themselves a competitive advantage.

Data Center Needs

When Matthias Koll, Infrastructure Manager for the facility needed to increase his facility's capacity, he knew it had to come from raising density in the racks. As his team planned and managed the change, they began seeing an increase in hotspots and sought for a reason why. Measures of cooling unit capacity indicated that the facility should be cooled consistently throughout, but a study by the US-based Uptime Institute provided a needed answer.

The Uptime Institute had conducted a comprehensive survey of actual cooling conditions in 19 computer rooms totaling 204,400 ft^2 of raised floor space to produce the study*. It was found that 10% of the racks had ambient temperatures of 75°F or higher at the air intake at the top of the rack, a prime condition for hotspots if cool air is not being used effectively. Hotspots were shown to decrease server reliability and even cause malfunctions or outright failures, causing unnecessary downtime.

The same study also showed that 60% of the available supply of cooled air is short-cycling back to the cooling units without ever passing through IT equipment – a phenomenon known as bypass airflow. With so many unsealed cable openings in the Amadeus facility, the related issue of bypass airflow needed to be immediately remediated to eliminate the facility's hotspots.

Solution

Koll began a comparison of options to seal the cable openings in the data center and KoldLok Grommets became the clear solution for his hotspots. KoldLok Grommets are specially engineered to eliminate bypass airflow in raised floor, mission critical environments. After contacting a local distributor, 130 KoldLok Grommets were installed in the facility to seal the various sizes of cable holes. The KoldLok Surface Mount's snaptogether design provided a fast, easy installation and a solution that covered a large number of holes. For smaller openings, the KoldLok Extended Grommet was easily modified to provide a custom solution to the Amadeus data center's needs.

To measure and report results, Koll called upon an independent advisory engineer. It was verified that the reduction of bypass airflow in the Amadeus data center achieved energy savings of €46,000 in the first year. Koll had achieved a full return on his investment in a period of just three months.

"In addition, we were able to record a 33% static pressure increase due to KoldLok sealing the raised floor openings," says Koll. "This meant we were able to lower our temperature set points and achieve greater efficiency than ever before."

Koll sees the greatest benefit in the fact that he does not need to purchase any additional cooling systems. "Since Amadeus, as a service provider, also offers hosting for the outsourced IT of its commercial customers, each square foot of space means more room for computer capacity, and therefore an increase in our own economic efficiency."

upsite technologies®

Designer & Manufacturer

(888) 982-7800 www.upsite.com