

DuctSox and Involta Collaborate to Design Effective, Energy-Efficient Cooling for Data Centers

DataSox™, the HVAC and data center industries' first customizable air displacement ventilation dispersion system with onsite directional-adjustability.

DuctSox®, Peosta, Iowa, manufacturer and innovator of fabric HVAC air dispersion systems, has collaborated with Involta™, a world class provider of highly reliable data centers, cloud services and IT outsourcing, for the purpose of improving cooling energy efficiency for data center operations.

The research and development (R&D) collaboration has recently-developed DataSox™, the HVAC and data center industries' first customizable air displacement ventilation dispersion system with onsite directional-adjustability, and plans additional HVAC innovations.

The Cedar Rapids, Iowa-based Involta has developed more than 256,000 square-feet of colocation data centers operating in Arizona, Pennsylvania, Ohio, Minnesota, Iowa and Idaho. Involta approached Ductsox R&D engineers to improve its equipment rack cooling air distribution for their new and existing locations.

DataSox's design resulted in reduced turbulence and sound levels, better efficiency measured in power usage effectiveness (PUE), which generated a significant difference in the bottom line cost of operations, according to Jeff Thorsteinson, chief security officer, Involta.



Fabric vs Metal

Involta first used a more conventional porous fabric diffuser system as a lower velocity air distribution alternative to rectangular metal ductwork and drafty linear diffusers. The fabric diffuser, which is commonly used in many commercial open architectural ceilings

applications, offered an improved operational margin, more effective cooling, and better energy efficiency than metal. The joint conversations between the two companies then lead to DuctSox's DataSox development.



Larger Air Volumes with Lower Air Velocities

DataSox is a round, overhead and porous/diffuse fabric HVAC diffuser system that's specifically designed to distribute a large volume of air down into data center cold aisles, but with low 400-FPM velocities. The controlled velocities don't upset critical equipment air intake and greatly reduce the volume of entrained air from hotter regions.

Optional flexibility of directional spot cooling capabilities are provided by adjustable nozzles for high density IT equipment racks.

Involta's first retrofit conversions from metal systems to DataSox was at its Marion, Iowa, facilities. The deployment which also included mechanical modifications to existing cold

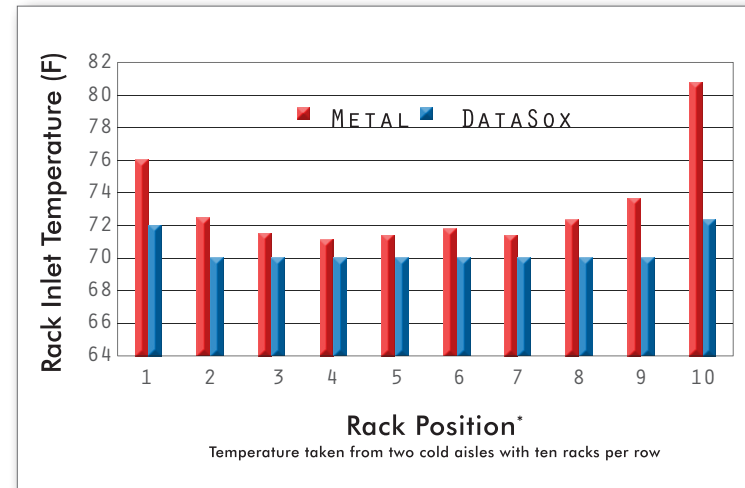
aisle containment equipment, reduced airflow by 40 percent, but maintained the same cooling temperatures due to better air distribution, according to Thorsteinson, who is committed to a steady rollout of DataSox in Involta's newly-built data centers as well as remaining retrofits. Reduced turbulence allows the rack equipment's fans to draw in cooling more easily.

Combined with some server and storage device change outs, the Marion facility retrofit

reduced electric utility costs by 80,000-kWhr/month, he added.

Another facility in Duluth, Minn., revealed an eight percent energy use reduction from just a DataSox deployment.

"Our (DuctSox and Involta) innovative air distribution from this collaboration has revolutionized the future performance standard expected from overhead cooling designs in data centers," Thorsteinson said.



For more information about how fabric air dispersion can improve the energy efficiency of your data center go to info.ductsox.com/datasox