

Veotec Patented Liquid Cooled Air Inlet Louvers Are Reshaping Cooling Efficiency for Data Centers and Gas Turbines

As data centers and power generation facilities face rising thermal loads, water scarcity concerns, and growing pressure to improve energy efficiency, airflow management has become more important than ever. Advanced inlet technologies are emerging as a critical part of the solution, especially for high-density server environments, gas turbine systems, and other mission-critical applications. Improving energy efficiency is critical for the data center ecosystem, especially as AI workloads and high-density computing continue to expand thermal demands.

Veotec Americas patented fluid-chilled radiator coil style air inlet louver systems offer an innovative development in this space. These high-efficiency air inlet louvers combine durable impact-resistant louver separators integrated with radiator-style coil tubing to heat or chill incoming air directly at the first stage of the ventilation system inlet. This approach delivers a powerful combination of environmental protection, thermal management, and energy optimization for modern data centers, gas turbines, marine systems, HVAC systems, and offshore installations.

Cooling and Heating at the Air Inlet Stage

Veotec Americas coil-style heating and cooling louvers conditioning the air immediately as it enters the system. This thermal louver technology can achieve thermal performance comparable to a 2-row or 4-row radiator-style coil configuration while maintaining low airflow resistance.

Using available fluid temperatures, the louver system can:

- Chill incoming air to reduce operating temperatures
- Heat incoming air to prevent harmful snow, ice, or hoar frost buildup
- Improve environmental conditions before filtration stages
- Reduce dependency on evaporative cooling systems
- Enhance operational efficiency and reliability

Sustainable Cooling and Water Efficiency

Water usage has become one of the biggest thermal management challenges facing the data center industry. Many facilities still rely heavily on evaporative cooling technologies that consume significant amounts of water.

Fluid-chilled air inlet louvers offer a more sustainable cooling solution by reducing dependency on evaporative systems. When combined with mechanical, hybrid adiabatic systems, geothermal cooling, these inlet louvers can dramatically reduce water consumption while delivering advanced cooling performance.

Benefits include:

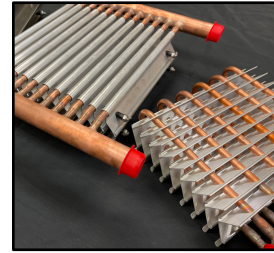
- Reduced water usage
- Improved environmental sustainability
- Enhanced cooling innovation
- Lower operating temperatures
- Improved reliability
- Better airflow optimization
- Reduced maintenance



Built for Critical Applications

Veotec Americas engineered these patented inlet louvers for some of the harshest and most demanding environments in the world. Applications include:

- Data centers
- Gas turbine power generation
- Offshore platforms
- Marine ventilation systems
- Industrial HVAC systems
- Mobile trailer cooling systems
- Critical airflow environments



Why Cooler Air Matters in Data Centers and Gas Turbines

Cooling incoming air can significantly increase air density, improving mass flow and thermal performance. In gas turbines, increased mass flow may improve power output. In data centers, cooler intake air supports more effective CPU and GPU thermal management for high-density server environments.

The impact of temperature on airflow density is substantial:

- 200,000 CFM at 100°F = 851,786 lb/hr (189,286 SCFM)
- 200,000 CFM at 80°F = 883,333 lb/hr (196,296 SCFM)
- 200,000 CFM at 65°F = 908,571 lb/hr (201,905 SCFM)

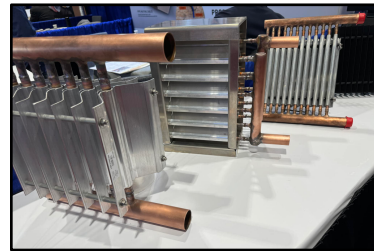
As inlet air temperatures decrease, airflow mass increases. That additional density can help support future performance needs while improving cooling effectiveness throughout the facility.

Supporting New Construction and Retrofit Projects

One of the major advantages of radiator coil style inlet louvers is their adaptability for both new construction and retrofitting existing data centers or turbine systems. Facility operators looking to modernize cooling infrastructure can integrate fluid heating or chilling directly into existing air intake systems without redesigning entire facility.

This flexibility supports:

- Advanced cooling technologies
- Chilled air circulation
- Geothermal integration
- Air cooling for thermal management
- Liquid cooling support systems
- Enhanced return on investment
- Reduced downtime risks



As thermal loads continue to increase across critical industries, first-stage inlet cooling and heating technologies are becoming an increasingly important tool for improving reliability, energy savings, and long-term sustainability.

Advancing the Future of Thermal Management

The future of data center and gas turbine performance depends heavily on smart thermal management strategies. From geothermal cooling to hybrid cooling systems and advanced liquid cooling integration, operators are seeking technologies that maximize efficiency while minimizing environmental impact. Patented fluid-chilled radiator coil style air inlet louvers represent a new approach to sustainable airflow management — conditioning air precisely where it matters most.

By combining air separation, anti-icing protection, chilled air circulation, and radiator-style thermal transfer into a single high-efficiency inlet system, Veotec Americas Liquid Cooling Louvers are helping advance the next generation of cooling innovation for critical infrastructure worldwide.