

Press release

Efficient air conditioning of data centres: Stulz sets new standards with CyberAir 3

With CyberAir 3, Stulz GmbH has raised the performance of its precision air-conditioning series to a whole new level. The air transmission path has undergone detailed technical optimisation. Innovations such as an EC fan with a three-dimensionally formed fibreglass-reinforced plastic impeller and the use of state-of-the-art EC compressors considerably reduce energy consumption.

Hamburg, 12 March 2011. Hamburg-based air-conditioning expert Stulz has once again succeeded in increasing the efficiency of its CyberAir series by thoroughly modifying the air transmission path. Through the enhanced CyberAir 3 design, the energy costs for cooling a data centre can be reduced by over 85% compared to traditional A/C systems. When considering 'Total Cost of Ownership' (TCO) the increased capital cost is recovered very quickly. "Working wholly in line with our "Mission Energy", our engineers have done their utmost to further increase energy-saving potential when it comes to cooling efficiency," asserts Bretislav Sklenak, managing director of Stulz GmbH Klimatechnik.

Here are the optimised details of CyberAir 3 at a glance:

EC fan with fibreglass-reinforced plastic impeller

Following extensive development work by Stulz engineers, a fan with fibreglass-reinforced impeller is now used in the CyberAir 3 product family. The main attraction here is that the completely three-dimensional shape of the impeller, with its aerodynamically shaped blades, greatly enlarges the fan surface. The fan is therefore inherently more efficient, thanks to its extremely low power input and reduced noise levels.

Ideal flow conditions thanks to CFD simulation

The flow of the new A/C unit has been analysed using the CFD (Computational Fluid Dynamics) method. This process enabled all aspects with a negative impact on air flow and capacity to be pinpointed and optimised. The result is uniform, low-resistance air transmission and low-cost operation.

Expansion valves with precision reaction

The precision A/C units of this series work exclusively with the very latest generation of electronically controlled expansion valves. These react precisely to fluctuations in temperature and pressure by correcting their opening angle in mere seconds, so increasing the system's capacity and efficiency. Where fine control is no longer sufficient, the cooling capacity is adapted by means of the compressor. In this way, the system always works in the optimum range.

EC compressor increases savings in partial load mode

As an option, a stepless EC compressor can be installed in CyberAir 3 GE models. By means of a stepless speed controller the cooling capacity is adjusted to match the actual room heat load. This means maximum efficiency in partial load mode combined with precise adherence to the desired temperatures and despite rapid changes in cooling capacity in a range of 30 to 100%. Moreover, the brushless, electronically commutated permanent-magnet motor and scroll compressor also help to guarantee maximum electronic and mechanical efficiency.

Ease of maintenance and service

CyberAir 3 precision air-conditioning systems are also even more user-friendly. The new panel system with just two different door sizes across the range, facilitates installation and service in the data centre. In developing this series, a paramount design consideration was making sure that all parts relevant to maintenance were readily accessible from the front.

Cooling capacities from 18 to 212 kW

With eight CyberAir cooling systems to choose from, data centre owners can select the cooling solution that offers the best balance between investment, running costs and energy efficiency for their particular needs. All configurations are available in upflow and downflow formats with cooling capacities ranging from 18kW to 212kW. As well as

chilled or condensed water variants, a choice of three refrigerants can be used: standard refrigerants R407C and R410A, and high-temperature refrigerant R134a.

All the innovations of the CyberAir 3 series can be applied and scaled to suit requirements. Solutions with Direct or Indirect Free Cooling then enable energy cost savings of more than 85% to be achieved, compared with traditional closed-loop control air-conditioning systems.

About STULZ GmbH Klimatechnik

Since it was founded in 1947, the STULZ company has evolved into one of the world's leading system suppliers of air-conditioning technology. With the manufacture of precision air-conditioning units and chillers, the sale of air-conditioning and humidification systems and service and object management, this division of the STULZ Group achieved a turnover of around 300 million euros in 2010. Since 1974 the group has seen continual international expansion of its air-conditioning technology business, specialising in A/C for data processing centres and telecommunications installations. STULZ employs 1,800 workers at five production sites (Germany, Italy, USA, China and India) and twelve sales companies (in France, Italy, Britain, the Netherlands, New Zealand, Poland, Spain, China, India, South Africa, Australia and the USA). Additionally, the company co-operates with sales and service partners in more than 100 other countries, and therefore boasts an international network of air-conditioning specialists. The STULZ Group employs over 4,000 people world-wide. Current turnover lies at around 700 million euros.



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