

MULTISTACK[®]

Originators. Innovators. Never the Imitators.

Howard Kelly
Communications and Marketing Director
hkelly@multistack.com
(608) 366-2400
1065 Maple Ave.
Sparta, WI, 54656

MULTISTACK ANNOUNCES MS-500F—A NEW BENCHMARK IN CHILLER PERFORMANCE

April 16, 2010 (Sparta, WI) Multistack LLC, the world leader in modular water chillers and the application of MagLev™ Compressor Technology, announces a new benchmark in the performance of its flooded chiller line. The newly enhanced Multistack MS-500F, 500-Ton Water-Cooled Chiller features four MagLev™ oil-free compressors (manufactured by Danfoss Turbocor Compressors) mounted on a common set of shells for maximum performance and redundancy.



The release of this chiller is the culmination of nearly a decade of development, and significant cooperative efforts between Multistack and Danfoss Turbocor. The outcome: a new breakthrough standard for efficiency.

In order to achieve these results, this product line from Multistack needed to step past existing commercial chillers on many levels. Incorporating design elements such as industrial-grade controls (both I/O and embedded PC), aerospace technology based oil-free compressors, factory-installed and optimized components to manage and enhance refrigerant flow, unit-contained control power supply with no transformers required, wireless power distribution to all compressors via a proprietary buss bar system using triple grounded and shielded VFD cabling to all four Maglev compressors. Clearly this chiller takes the standard of quality and performance to new levels.

“I continue to believe that invention and creativity are the fuel that will drive our industry over the next decade. In an industry where many believe we have stabilized our technologies and that HVAC Manufacturing is about incremental improvement in a well-defined environment, I prefer our business model of dynamic change by leveraging disruptive technology. Just in the past weeks we had been told that several of the achievements represented by the MS-500F simply could not be done. It’s amazing what you can accomplish when you don’t know what is impossible,” said Mark Platt, President of Multistack.

During a witness test performed on the Multistack AHRI-certified test stand this past week, the 500-ton chiller offered unprecedented performance—posting a 50-percent part-load performance of just 0.257 kW per ton. A clear reason for the phenomenal performance is the Multistack proprietary FlexSys control system. By monitoring each compressor individually and tuning it to run at peak performance with the three other compressors simultaneously, the FlexSys system maximizes energy efficiency moment-by-moment in an extremely complex, dynamic environment. In addition to individual compressor monitoring, the FlexSys system has complete remote monitoring and control capabilities through a standard broadband connection, while its extensive trend-logging and continuous commissioning features insure accurate, reliable and sustainable lifetime performance of the system. The combined features of the FlexSys controller have made it the class of the industry.

Looking closer at the performance numbers on this 500-ton machine demonstrates that Multistack is leading the industry in unlocking the potential of the Danfoss Turbocor manufactured MagLev compressors and proves that significant energy savings can be found through the use of this knowledge and technology. This chart summarizes the measured performance of this chiller:

PERFORMANCE SUMMARY—MULTISTACK MS-500F, 500-TON FLOODED MAGLEV CHILLER		
Test Stand #3, Multistack Headquarters, Sparta, WI, 10-April-2010		
Approx % Capacity Output	Capacity Output—Tons of Refrigeration	System Efficiency in kW/Ton
100%	508	0.565
75%	374	0.381
50%	251	0.257
30%	161	0.201
25%	136	0.197
Chiller NPLV 0.288		

“The Flooded MagLev product line is the most exciting and compelling chapter yet in my 10 years working with this technology. The industry perception has always been that multiple small compressors cannot match traditional centrifugal performance. With the performance we’ve been able to achieve, that is no longer the case,” said Will Martin, Director of Centrifugal Product Development at Multistack. “When I showed the system to Multistack co-founder Monte Holman (former Trane Company VP of Engineering and one of the forces behind the development of the Trane Three-Stage Centrifugal) he said we have done something quite remarkable that has never been done before.”

This enhanced Multistack 500-ton chiller is now on its way to the Clark County School District in Las Vegas, where it will be matched with a second identical machine as well as the groundbreaking Multistack Chiller Plant Optimization System. More to come!

www.multistack.com