

IBM Aquasar Launch

HUNTSVILLE, Ala., July 26 2010 – IBM has announced the successful launch of the pilot operation of its newly developed Zero Emissions Liquid Cooled, Blade Server, *Aquasar*, within the Department of Mechanical and Process Engineering at the Swiss Federal Institute of Technology Zurich (ETH). IBM worked closely with Wolverine's MicroCool™ Division to develop the innovative liquid cooling components within this new high performance computer which consumes up to 40 percent less energy compared to a similar system using air cooling technology. The pilot operation at ETH also provides warmth to the university building through the direct use of waste heat from the computer.

IBM and Wolverine have been collaborating for almost three years on Aquasar's Zero Emissions Blade Server concept. The goal of this pilot operation was to create a state-of-the-art data centre driven by the newest supercomputers which utilize a waste heat recovery, liquid loop to maintain operating temperatures without the use of auxiliary air conditioning or chillers. The novel IBM blade server relies on a proprietary MicroCool™ cold plate and integrated Wolverine copper liquid cooling loop to maintain the entire electronic foot print below 80°C, with a 60°C inlet fluid made up of water.





Wolverine worked closely with École Polytechnique Fédérale de Lausanne (EPFL)'s John Thome, Professor of Heat and Mass transfer, to design and develop a MicroCool™ channel geometry and cold plate construction to meet this difficult thermal performance objective. Wolverine utilized its patented **Micro Deformation Technology** (MDT) to design the IBM MicroCool™ cold plate. Wolverine also fully leveraged its tube forming and joining expertise to produce a light weight and compact integral copper loop with maximum thermal performance and reliability.

“We are very excited about the opportunity to provide the liquid cooling components for IBM’s first-of-a-kind water-cooled supercomputer,” said Wolverine’s MicroCool™ Division’s Manager, Engineering and Manufacturing, Sy-Jenq Loong. “By fully leveraging our core joining technology and expertise, we designed a thermally-efficient cooling loop with minimal joints, resulting in a more robust cooling system with cost saving benefits.”

At Aquasar’s kick-off meeting, IBM’s Senior Vice President of R&D, John Kelly, Ph.D., announced the company’s commitment to a global platform of liquid cooled blade servers to reduce the electrical consumption generated by the air conditioning systems of today’s data centres. The future development of faster and more power hungry micro-processors makes this technical achievement even more critical for next generation data centres.

[Click here](#) to see photos of Aquasar on Flickr.

[Click here](#) to learn more about Aquasar on YouTube.

About Wolverine

Wolverine is a leading manufacturer and supplier of technically advanced, surface-enhanced copper and copper alloy tube, fabricated products, and high-tech brazing and joining products. Wolverine's proprietary, custom-engineered tube products provide thermal management solutions for our customers in multiple markets including HVAC, refrigeration and appliance, electronics cooling, power generation, petrochemical and chemical processing. Wolverine delivers the most advanced metal surface technology enhancements for heat transfer solutions in today's marketplace. Internet addresses: www.wlv.com, www.microcooling.com



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