

Turbomiser III Harnesses New Adiabatic Technology to give a 50 per cent Energy Advantage

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Release type: **Products**

The latest generation of the award-winning, ultra-efficient Turbomiser chiller uses a new kind of adiabatic technology that shaves a further 20 per cent off energy running costs. When combined with its high efficiency TurboCor compressors, EC fans and Liquid Pump Amplification (LPA) system, the Turbomiser III Adiabatic Advantage chiller delivers energy savings of more than 50 per cent compared with conventional screw and reciprocating chillers.

The Turbomiser III is equipped with an innovative evaporative system on the face of condensers coils. This "adiabatic advantage" effectively reduces ambient temperatures in the immediate vicinity of coils by up to 8deg C, lowering condensing temperatures and dramatically improving the chiller's energy performance.

The adiabatic system is fed by nebulised water, which is absorbed by a porous natural-fibre honeycomb array facing condenser coils. The system can be set to activate automatically at a predetermined external temperature.

The evaporative process is fed directly by UV-sanitised water, overcoming problems related to standing or recirculated water – and avoiding risks of Legionnaire's Disease and bacteria build up, while keeping maintenance costs low.

Water consumption is extremely frugal, with a standard unit in UK conditions using around £600 worth of water a year to deliver energy savings worth some £8000.

The Turbomiser III is the fruit of a five-year development programme by Italian manufacturer Geoclima and UK companies Klima-Therm and Cool-Therm. The Turbomiser has won a string of awards, culminating recently in CIBSE's Low Carbon Technology of the Year award.

Helped by its LPA system, it can achieve EERs of 10 and above without the need for additional free-cooling circuits with expensive glycol, saving both on initial cost and ongoing pump energy.

The adiabatic system adds a further dimension, not only improving again on energy performance but effectively increasing chiller capacity at peak load conditions, enabling it to cope with high ambients that might otherwise overwhelm a standard chiller.

Combining the LPA and Adiabatic Advantage technology improves the efficiency of the chiller at both low and high ambients, ensuring class-leading performance in all conditions and seasons throughout the year.

Roberto Mallozzi, managing director of Klima-Therm, says: "The increase in headroom is extremely useful, given the general rise in ambients we are witnessing in recent years. It gives end users a big extra margin for confidence that an installation can cope with any eventuality – particularly important in critical applications such as data centres or dealing rooms."

Ken Strong, managing director of Cool-Therm, said: "The initial cost of the adiabatic advantage and ongoing running costs is dwarfed by the energy savings by a factor of ten. For end users looking to reduce running costs, cut carbon and build capacity headroom for security purposes, it is the perfect solution."

A first generation Turbomiser chiller installed at Blue Reef / IMAX in Bristol, which also uses dock water for cooling, is performing with an EER of 12.9. The latest generation would improve further on this.

The Turbomiser III is available in capacities from 250kW to 1.5MW, and can be applied in most commercial and industrial applications.

It is ideal for cooling data centres, large retail developments and deep plan buildings that have a constant base load. Hospitals and hotels, with their need for all-year-round cooling, are also excellent applications.

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