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COFELY PROVIDES AQUATIC FUN FOR THE OPEN AIR SWIMMING POOL IN KRUMBACH.

Heat from the cold river: Oil-free heat pump systems for the open-air adventure pools in Ebermannstadt and Krumbach.

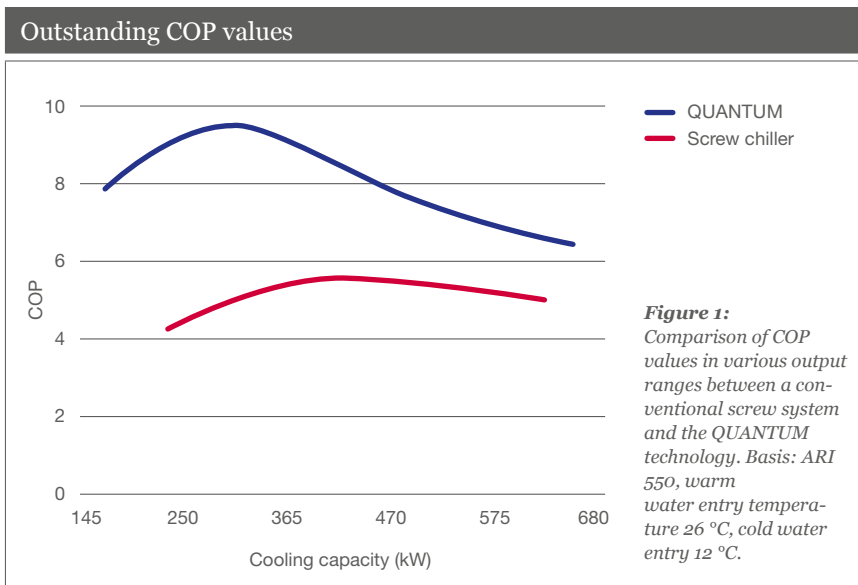
ENERGY-EFFICIENT POOL HEATING

Since the 70s, heat pumps are used to extract energy from nearby surface waters for heating indoor and open-air swimming pools. Obsolete technologies are still frequently used for this kind of systems and require a lot more energy than modern heat pump systems.

Since the spring of 2006, QUANTUM heat pumps from COFELY REFRIGERATION have been used to heat the open-air adventure pools in Krumbach and Ebermannstadt. There are several advantages for the operators.

REDUCED ENERGY COSTS

A huge reduction in energy consumption has been achieved through the use of the QUANTUM technology. The energy efficiency / COP in partial load rises up to > 9 and to 6.4 in the full load. Only 106 kW of electrical power are required for a heat supply of 686 kW. The remaining 580 kW heating capacity are drawn from the river water (Fig. 2).



A model calculation referring to the system described above resulted in yearly energy cost savings of 52 %.

OIL-FREE CHILLER

The refrigerant circuit and the entire heat pump are completely oil-free so there is no need for any corresponding safety measurements. In case of

a leakage, there is no risk to pollute the river or the pool water with oil.

WHISPER-QUIET OPERATION

The QUANTUM works almost without sound emissions and vibration.



Optimal ratio of energy consumption to heating capacity with QUANTUM

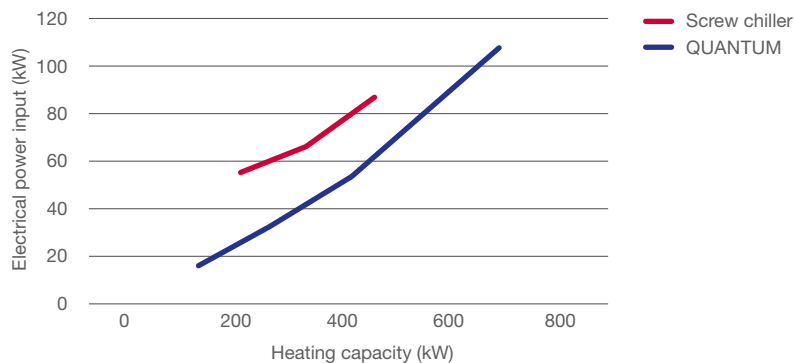


Figure 2: Significantly lower electrical power consumption for the same heat output using the QUANTUM technology.

The average vibration velocities of 0.04 mm/s are fifty times lower than the level classified as “good” or “very good” (by the VDI (VDI 2056) – for relaxing bathing fun.

ADVANTAGES OF THE QUANTUM TECHNOLOGY

- Up to 52 % lower operating costs
- Compact technical and constructional solution
- Oil-free
- Low sound and vibration emissions

Technical Data

- 1 x QUANTUM heat pump with two turbo compressors with magnetic bearings for each swimming pool
- Heating capacity: max. 680 kW
- COP (at full load): 6,4
- River water: 11 °C
- Pool water: 24 °C
- Completion: April 2006

PERFECT SYSTEM DESIGN

The plants were completed on time for the open-air pool season starting in April 2006. COFELY REFRIGERATION’s scope of supply not only included the punctual installation of the heat pump, but also the hydraulic integration into the existing system and the professional removal of the old machine.

Further peripheral equipment like river water pumps and system control cabinets can be supplied additionally. Another alternative is to install the heat pump and the peripheral equipment in a weatherproof container in case of the absence of a machinery room.



Heat pump in the machinery room of the outdoor swimming pool in Krumbach

SATISFIED CUSTOMER

“The energy savings promised by COFELY REFRIGERATION through using the QUANTUM technology in the Ebermannstadt open-air adventure pool have been realised. We are very satisfied, not only with the outstanding technology, but also with the installation and the services provided by COFELY REFRIGERATION.”

Harald Herbach
Industrial Foreman for Water Supply
Stadtwerke Ebermannstadt GmbH

Customer

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Planning and execution

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