



SPECTRUM provides cool air and warm water through the year.

Use as a heat pump in the industrial sector producing cooling/cold water for air-conditioning buildings all year round.

A impressively wide spectrum

The SPECTRUM from ENGIE Refrigeration has a wide range of uses and is extremely well suited to being used as a unit for industrial process refrigeration. At the same time it can also make warm water available. As is the case with any heat pump, there is a fixed relationship between the cold and the heat which is generated: The thermal output is approx. 230 kilowatts (kW), approx. 290 kW or approx. 360 kW with temperatures over 60 °C and simultaneous refrigeration performance of approx. 130 kW, approx. 160 kW or approx. 190 kW at -10°C. These are the maximum values which can be achieved when implementing the models. One additional benefit: Thanks to the open flash economiser that SPECTRUM uses, the chilling and heating performance can continuously be regulated by up to approx. 20% of the nominal power.

Fit for use in any ambience/surrounding

It is well known that expert care in conjunction with a pleasant indoor climate can aid recovery - the SPECTRUM is therefore ideally suited for use in hospitals and clinics. It is able

to satisfy the necessary requirements in this area: a steady flow of cool air or air-conditioning as well as a constant supply of hot or cold water in large quantities.

Rooms in hotels are also often air-conditioned. In this case, a large volume of warm water does not always have to be readily available, but rather in the mornings and evenings when guests shower or take a bath. Not a problem for the SPECTRUM: In the hotel sector, the thermal output can be used to heat the building; the warm water generated is practically stored in water tanks so that it can be used at peak times.

An **indoor swimming pool**, of course, always requires a large amount of hot water. But the air quality is also of importance in order to provide a great bathing experience. The SPECTRUM also performs well in swimming complexes: It dehumidifies the air whilst simultaneously heating the pool and water for the shower area.



The characteristics of a specialist in efficiency

The SPECTRUM's high performance core is an open flash economiser that facilitates a higher refrigeration performance compared to conventional chillers with a speed-controlled screw compressor - even if it uses a subcooler economiser. Equipment operators profit from higher Seasonal Energy Efficiency Ratio (SEER) values in the refrigeration segment, and higher Seasonal Coefficient of Performance (SCOP) values when used as a heat pump.

In addition, the SPECTRUM also offers a SIMATIC S7 control unit that corresponds with the most current industry standard and is also compatible over the long-term, expandable on a modular basis, scalable, vibration-resistant and maintenance-free.

The SPECTRUM lives up to its name as it can always be adjusted to the customer's requirements or application and can cover a wide utilisation and temperature spectrum. There is also the option of dividing the condenser and thus adapting the available heat to the application regardless of the required chiller performance.

SPECTRUM'S benefits

- Optimal primary energy utilisation whilst simultaneously using the side that heats and refrigerates
- Minimal energy costs in comparison to separate systems for heating and refrigerating
- Lower investment costs for the necessary infrastructure compared to separate systems for heating and refrigerating
- Cost savings by adapting to the actual cooling and heating required
- Reduced space needed for the technical building installation
- Lower maintenance requirements
- Funding possibilities through government programs



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