

Experimental Study on Energy Efficiency of Heat-source Tower Heat Pump Units in Winter Condition

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Abstract: Building energy consumption in China has been increasing rapidly. And a small increase in the operation efficiency of the air-conditioning system can substantially decrease it. In this paper a new type heat pump is developed to improve the performance of conventional air-source heat pumps. The major components of heat-source tower heat pump units are closed-type heat-source tower (cold and heat sources absorption equipment) and heat pump of low temperature heat source. According to the relevant ... **View more**

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I. Introduction
With the development of economic and the improvement on living standard of people, the building energy consumption (BEC) in China has been increasing rapidly [1]. BEC in China has been increasing about 10% a year for the past 20 years, and by the year 2004, BEC has constituted about 20.7% of the total national energy consumption [2]. The ever increasing BEC should largely be due to the increasing use of air-conditioning system in the increasing number of modern buildings. The energy amount used by air-conditioning system will account for over 40% of the total energy consumption in buildings in the southern cities of China [3]. Therefore, a small increase in the operation efficiency of the air-conditioning system can substantially decrease building energy consumption.

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