

**Experimental Research on the energy saving optimization operation under part-load for the Air-cooled Chiller #**

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**Abstract:**

To improve the efficiency of the air-cooled water chiller running under the part load condition .We put forward a energy-saving method: compressors、 condensers and evaporators in parallel connection, and the electric expansion valve used to control refrigerant fluid. A series of experimental researches have been made to test the energy conserving performance and the internal parameters of the prototype chiller under the part load. The result shows that under the part-load condition, this method will improve the working condition and the COP of the chiller is raised obviously. The research also shows that we can make full use of the improved environment to promote the performance of the chiller. Meanwhile the further improvement on the application of the electric expansion valve and the design of the evaporator will still be demanded.

Keywords: air-cooled chiller; part-loads; Optimization operation; energy-saving method; experimental research; parallel connection ; COP

#: This research is supported by RGC of Hong Kong