
Experimental performance of a direct evaporative cooler in composite climate of India



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ABSTRACT

Evaporative air coolers are widely used in peak summer seasons for air conditioning in residential and commercial building spaces. Cooling pads play a major role in cooling efficiency and energy performance of the evaporative air coolers. This paper presents the experimental results of a direct evaporative cooler with two different cooling pads based on actual weather data. Honeycomb and Aspen cooling pad of same rectangular cross-sectional area are considered for the analysis. The various performance parameters like cooling capacity, power consumption, energy efficiency ratio are evaluated analytically and experimentally. The results show that the energy efficiency ratio and cooling capacity of an air cooler with Honeycomb cooling pad is better than the Aspen cooling pad of the same surface area. Evaporative air cooler with honeycomb cooling pad is more suitable in hot and dry, composite climatic condition zone.

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