

Accepted Manuscript

Title: A simplified experimentally tested theoretical model to reduce water consumption of a direct evaporative cooler for dry climates

Author: A.E. Kabeel, M.M. Bassuoni

PII: S0140-7007(17)30244-X

DOI: <http://dx.doi.org/doi: 10.1016/j.ijrefrig.2017.06.010>

Reference: IJIR 3675

To appear in: *International Journal of Refrigeration*

Received date: 31-3-2017

Revised date: 27-5-2017

Accepted date: 5-6-2017

Please cite this article as: A.E. Kabeel, M.M. Bassuoni, A simplified experimentally tested theoretical model to reduce water consumption of a direct evaporative cooler for dry climates, *International Journal of Refrigeration* (2017), <http://dx.doi.org/doi: 10.1016/j.ijrefrig.2017.06.010>.

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A simplified experimentally tested theoretical model to reduce water consumption of a direct evaporative cooler for dry climates

A. E. Kabeel* and M. M. Bassuoni*

*Department of Mechanical Power Engineering , Faculty of Engineering, Tanta University,
Egypt

Tel: (+2 0100) 1543587, E-mail: kabeel6@hotmail.com

Tel: (+2 0100) 5852335, E-mail: mahgoub.m@gmail.com

Research Highlights

- Introducing simple modified experimentally tested theoretical model for direct evaporative cooler.
- Reducing water consumption of a direct evaporative cooler is studied.
- From experimental runs the sprinkled water temperature is 2.5°C higher than inlet WBT.
- At 200 000 PPM, 1.5 L/h water consumption reduction is reached with 8.6% increase in t_{a2} .
- Using sea water as feeding to the cooler results in 3.5% saving in consumed water.

Abstract

The aim of this study is to introduce a simple modified experimentally tested theoretical model to mainly reduce the water consumption rate of a direct

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