

Calculation of the glass cover temperature and the top heat loss coefficient for 60° vee corrugated solar collectors with single glazing

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Abstract

In this paper, the top heat losses from a 60° vee corrugated solar collector with single glazing have been investigated. An approximate method for computation of glass cover temperature and top heat loss coefficient has been followed. A modified equation from Akhtar and Mullick's relation was proposed. The predicted values of the glass cover temperature and the top heat loss coefficient were compared with the results obtained by iterative solution of the energy balance equations over a wide range of operating conditions. A good accuracy is provided by the proposed equation which is recommended to be used in the energy analysis of the present configuration.

Keywords: Flat plate solar collector, Vee corrugated absorber plate, Glass cover temperature, Top heat loss coefficient.

Link <https://getinfo.de/app/Calculation-of-the-glass-cover-temperature-and/id/elsevier%3Adoi~10.1016%252Fj.solener.2011.11.019>