













## NOMENCLATURE

|            |  |
|------------|--|
| $A_c$      | surface of the flat plate solar collector, $m^2$   |
| $C_p$      | Specific heat, $J.kg^{-1}.K^{-1}$                  |
| $F_R$      | collector heat removal factor                      |
| $G$        | total solar energy received, $kJ$                  |
| $H$        | enthalpy variation, $kJ.kg^{-1}$                   |
| $I_t$      | instantaneous solar radiation incident, $W.m^{-2}$ |
| $\dot{m}$  | flow rate of air per unit area, $kg.s^{-1}.m^{-2}$ |
| $q_{in}$   | total energy received, $kJ$                        |
| $q_{loss}$ | total energy lost, $kJ$                            |
| $q_u$      | useful energy, $kJ$                                |
| $T$        | temperature, $^{\circ}C$                           |
| $t$        | time, $s$  |

$U_L$  overall thermal loss coefficient,  $W.m^{-2}.K^{-1}$

## Greek symbols

|          |  |
|----------|--|
| $\alpha$ | solar absorptance of the absorber            |
| $\eta$   | thermal efficiency                           |
| $\tau$   | solar transmittance of the transparent cover |

## Subscripts

|    |          |
|----|----------|
| am | ambient  |
| c  | absorber |
| i  | inlet    |
| o  | outlet   |