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NOMENCLATURE

A	Area (m^2).
Cp	Specific heat (kJ/kg.K).
E	Energy transferred by the collector (W).
Ex	Exergy transferred by the collector (W).
g	Constant of gravitational (9.81 m^2/s).
G	Irradiation intensity (W/m^2).
hc	Convective heat transfer coefficient ($W/m^2.k$).
hr	Radiation heat transfer coefficient ($W/m^2.k$).
k	Thermal conductivity(W/m.k).
L	Length (m).
$m^{\cdot}$	Mass fiow rate (kg/s).
P	Pressure (pa).
Pr	Prandtl number.
R	Specific gas constant for dry air (287.05 J/kg.K).
Ra	Rayleigh number.
t	Insulation thickness (m).
T	Temperature (^oC).
U	Heat loss coefficient ($W/m^2.k$).
V	Out let air velocity (m^2).
W	Width (m).

Greek letters

ε	Emittance (0.88) for glass, (0.15) for absorber plate.
η	Efficiency (%).
ρ	Density (kg/m^3).
σ	$5.67 * 10^{-8}$ ($w/m^2\_K^4$)
Γ	Latent heat of fusion (kJ/kg).
v	Air kinematic viscosity (m^2/s)
β	Collector tilt angle (deg).
β'	Expansion volumetric coefficient ($\beta' = 1/T$).

Subscripts

a	Air.
atm	Atmospheric.
b	Back side.
b-a	From the collector back side to ambient.
c	Collector.
d	Duct cross sectional area at outlet air.
e	Edge.
g	Glass.
g-a	From the collector glass cover to ambient.
in	Inlet.
m	Melting.
out	Outlet.
p	Absorber.
p-g	From the collector absorber plate to glass cover.
s	Storage.
t	Top.