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NOMENCLATURE

A	area (m^2).
G	irradiation (W/m^2)
h_c	convective heat transfer coefficient ($W/m^2.k$).
h_r	the radiation heat transfer coefficient ($W/m^2.k$).
h_w	the convective heat transfer coefficient by the wind ($W/m^2.k$).
K	thermal conductivity($W/m.k$).
L	distance (m).
N	number.
Pr	prandtl number.
Q	Energy.
T	temperature (^oC).
U	heat loss coefficient ($W/m^2.k$).
V	average velocity of the out let air(m/s)
v	air kinematic viscosity(m2/s)

Greek symbols

ε	emittance
η	efficiency (%)
ρ	density(kg/m^3)
β	collector tilt angle(deg)

Subscripts

a	air.
b	collector bottom insulation
b-a	from the bottom to ambient.
c	collector.
d	duct
e	collector edge insulation
e-a	from the edge to ambient
g	gravitational constant (9.81 m^2/s)
g-a	from the glass to ambient.
p-g	the absorber plate to glass cover.
t	top
t_b	collector bottom insulation thickness (m).
t_e	collector edge insulation thickness (m).