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NOMENCLATURE

T_1	Glass temperature. (K)
T_2	Absorber plate temperature. (K)
T_f	Air flow temperature. (K)
T_a	Ambient air temperature. (K)
T_s	Sky temperature. (K)
I	Incident solar radiations. (W/m^2)
h_1	Convective heat transfer coefficients between glass cover and air stream. (W/m^2K)
h_2	Convective heat transfer coefficient between the absorber plate and air flow. (W/m^2K)
h_{r21}	Radiation heat transfer coefficient. (W/m^2K)
h_{rs}	Radiation heat transfer coefficient. (W/m^2K)
h_w	Wind convection heat transfer coefficient. (W/m^2K)
C_p	Heatcapacity of air. (J/Kg K)
K_f	Thermal conductivity of air stream. (W/m K)
k_{bi}	Thermal conductivity of insulation. (W/m K)
U_L	Top heat loss coefficient. (W/m^2K)
U_b	Bottom heat loss coefficient. (W/m^2K)
\dot{m}	Mass flow rate. (Kg/s)
V	Wind velocity. (m/s)
Nu	Nusselt number
Re	Reynolds number
W	Width collector. (m)
L	Length of collector. (m)
X_{bi}	Insulation thickness. (m)
d	Spacing between absorber plate and glass cover. (m)
D_h	Equivalent hydraulic diameter. (m)
A	Cross section of flow area. (m^2)
P	Wetted perimeter. (m)
Q	The useful heat transferred to air
H_{fm}	Height of fins. (m)
t_{fin}	Thickness of fins. (m)

Greeks symbols

ϵ_1	Emissivity of glass cover
ϵ_2	Emissivity of absorber surface
α_1	Absorptivity of absorber plate
α_2	Absorptivity of cover glass
τ	Transmissivity
ρ	Density of air stream (Kg/m^3)
σ	Stefan –Boltzmann constant
μ	Dynamic viscosity of air stream ($Kgm^{-1}S^{-1}$)