The influence of the opening's width over the convective heat transfer, clearly appears. A correlation C = f (aspect ratio W/H) is stated in table 2.

Being in good agreement with the general literature, it still remains that the present results are specific to the particular geometry and the supply heating and cooling conditions of the test chamber. However it is interesting to note that estimations of convective heat transfer between rooms through normal doors in residential buildings can be calculated using empirical correlation proposed in this paper as the experiments were performed in a realistic full scale test chamber.

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NOMENCLATURE

A_{DS}: door Aspect ratio W/H
C: coefficient
C_d: discharge coefficient
C_P: specific heat of air (J/Kg K)
g: gravitational acceleration (m / s^2)
G_r: grashof number
H: height of opening (m)
h_c: convective coefficient (W / m^2 K)
h_n: height of neutral axis
T: temperature (K)
$T_{1,2}$: temp.of hot and cold zone (K)
$\dot{Q}$: heat flow rate (W)
K: thermal conductivity (W / m K)
M: exponent
N_u: Nusselt number
Pr: Prandtl number
v: air velocity (m / s)
V: volume flow rate (m^3 / s)

Greek symbols

ν: Kinematic viscosity of air (m^2 / s)
β: coefficient of thermal expansion of air (1 / K)
ρ: density of air (Kg / m^3)
ΔT: temperature difference (K)