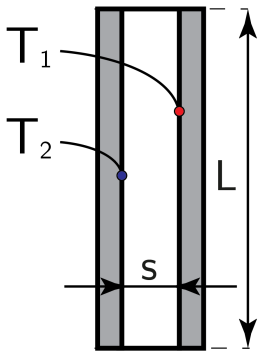
Grashof Number 05

Give an expression for the Grashof number in terms of given variables.



The standard expression for the Grashof number is:

$$\mathrm{Gr} = \frac{g\beta\left(T_\mathrm{H} - T_\mathrm{L}\right) L_\mathrm{c}^3}{\nu^2}$$

In this case, the Grashof number used for determining the rate of heat transfer from theright plate to left plate should be determined.

In that case, the characteristic length is:

$$L_\mathrm{c} = s$$

And it is given that $T_2 < T_1$.

So we can define the Grashof number as:

$$\mathrm{Gr} = \frac{g\beta\left(T_1 - T_2\right) s^3}{\nu^2}$$