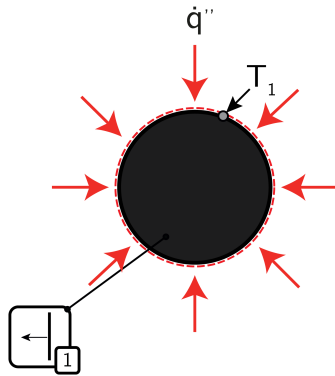


# Surface Brightness 08

Determine the surface brightness  $\dot{Q}_1$ .



Definition of the surface brightness:

$$\dot{Q}_1 = \dot{Q}_{1,\epsilon} + \cancel{\dot{Q}_{1,\rho}^0} + \cancel{\dot{Q}_{1,\tau}^0}$$

Defining the emitted, reflected and transmitted radiation:

The emitted radiation of a black body radiator can be stated as:

$$\dot{Q}_{1,\epsilon} = \cancel{\epsilon}^1 \sigma A_1 T_1^4$$

Inserting and rewriting:

$$\Rightarrow \dot{Q}_1 = \sigma A_1 T_1^4$$