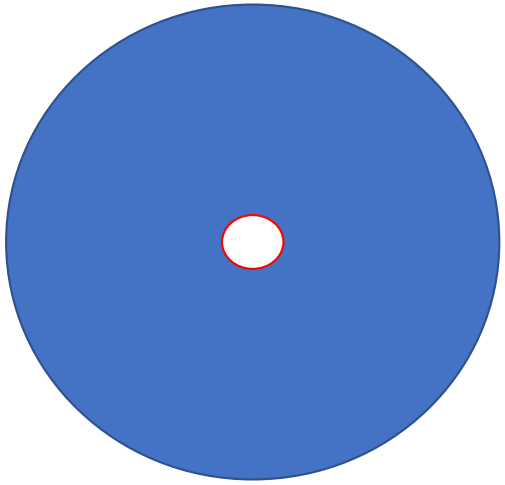

$R_0 = 0.3$ cm; $R_1 = 5$ cm; $\eta = 4.2\ W/cm^2/deg$

$\eta \times 2\pi \cdot R\ \frac{dT}{dR} = -2.47$ kW/cm^2 $\times 0.3$ cm $= -0.741$ kW/cm

$T = c_1 \ln \frac{R}{R_0} + c_2$

at R $= R_1$; T $= 22$ deg C,

at R $= R_0$; $\frac{dT}{dR} = c_1/R = -741/4.2/1.88 = -94$ deg/cm

$22 = c_1 \times 2.81 + c_2$ and $c_1 \frac{1}{R_0} = -94$,

so $c_1 = -28.2$ and $c_2 = 101$; so $T_{R=R_0} = 101$;