# Advanced Topics in Computer Graphics I - Sheet R01

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## Assignment 3

### Irradiance

The irradiance $E$ is given by the formula:

$$E = \frac{\mathrm{d}\Phi}{\mathrm{d}A} = \int_\Omega L_s \cos\varepsilon \, \mathrm{d}\Omega = 20.045 \frac{MW}{m^2 \cdot sr} \cdot \cos(45^\circ) \approx 14.174 \frac{MW}{m^2}$$

### Total Radiant Power

The total radiant power $\Phi$ incident on the table plate is given by the formula:

$$\Phi = \int_A E \, \mathrm{d}A = E \cdot A \approx 14.174 \frac{MW}{m^2} \cdot 0.8m \cdot 0.8m \approx 907133.147MW$$