40.11

Dane: $S = 1\,cm^2 = 10^{-4}\,m^2$, $I_0 = 10^{-12}\,\frac{W}{m^2}$, $\Lambda = 120\,dB = 12\,B$

Szukane: $P = ?$

Wzór: $P = I \cdot S$, $\Lambda = \log\left(\frac{I}{I_0}\right) \Rightarrow 10^{\Lambda} = \frac{I}{I_0} \Rightarrow I = 10^{\Lambda} \cdot I_0$

Rozwiązanie

$$P = I \cdot S = S \cdot 10^{\Lambda} \cdot I_0 = 10^{-4}\,\cancel{m^2} \cdot 10^{-12}\,\frac{W}{\cancel{m^2}} \cdot 10^{12} = 10^{-4}\,W$$

Odp: $P = 10^{-4}\,W$