

62. The area is proportional to W^2 , so the result of problem 61 plus the definition of intensity (power P divided by area) leads to

$$\frac{I_2}{I_1} = \frac{P/W_2^2}{P/W_1^2} = \frac{W_1^2}{W_2^2} = \frac{f_1^2}{f_2^2} .$$