

21. The plasma completely reflects all the energy incident on it, so the radiation pressure is given by $p_r = 2I/c$, where I is the intensity. The intensity is $I = P/A$, where P is the power and A is the area intercepted by the radiation. Thus

$$p_r = \frac{2P}{Ac} = \frac{2(1.5 \times 10^9 \text{ W})}{(1.00 \times 10^{-6} \text{ m}^2)(2.998 \times 10^8 \text{ m/s})} = 1.0 \times 10^7 \text{ Pa} = 10 \text{ MPa} .$$