

Answer #149

The answer is (b): between 90 and 100 dB. In fact the meter will read 93 dB, as seen in an mpeg video by clicking on the photograph below.



The decibel scale of the sound level meter is similar to the way that our ears respond to varying intensities of sound.

Mathematically, when the intensity becomes twice as great, the decibel level *increase* is given by

$$10 \log_{10}(I/I_0) = 10 \log_{10}2 = 10 \times 0.3 = 3 \text{ dB},$$

so the total intensity level is $90 + 3 = 93 \text{ dB}$.

[Archive 8](#)

[Question of the Week](#)

[Outreach Index Page](#)

[Lecture-Demonstration Home Page](#)



For questions and comments regarding the *Question of the Week* contact [Dr. Richard E. Berg](#) by e-mail or using phone number or regular mail address given on the [Lecture-Demonstration Home Page](#).