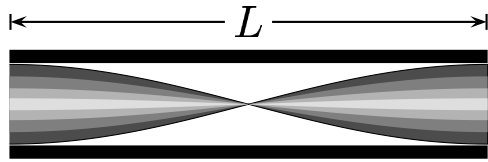
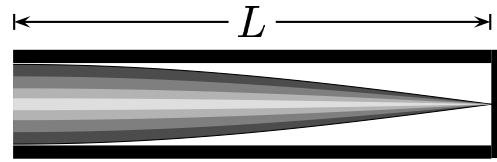


The wave patterns of the fundamental modes for the open-open and open-close organ pipes are shown above.



open – open



open – closed

The wavelengths of the fundamental modes are

- A) open-open L open-closed $2 L$.
- B) open-open L open-closed $4 L$.
- C) open-open $2 L$ open-closed $2 L$.
- D) open-open $2 L$ open-closed $4 L$.

Notice that the standing wave pattern for a full wavelength contains two loops.

For the open-open case, it corresponds to the length of one loop, so $L = \frac{\lambda}{2}$, or $\lambda = 2 L$.

For the open-closed case, $L = \frac{\lambda}{4}$, or $\lambda = 4 L$.

Answer **D**