5 The density of the material of a rectangular block is determined by measuring the mass and linear dimensions of the block. The table shows the results obtained, together with their uncertainties.

$$mass = (25.0 \pm 0.1)\,g$$
$$length = (5.00 \pm 0.01)\,cm$$
$$breadth = (2.00 \pm 0.01)\,cm$$
$$height = (1.00 \pm 0.01)\,cm$$

The density is calculated to be $2.50\,g\,cm^{-3}$.

What is the uncertainty in this result?

A $\pm 0.01\,g\,cm^{-3}$ **B** $\pm 0.02\,g\,cm^{-3}$ **C** $\pm 0.05\,g\,cm^{-3}$ **D** $\pm 0.13\,g\,cm^{-3}$