



How to Read Scientific Notation on your particle counter display

Tech Note

“HELP! My particle counter just told me there are 1.56E5/m3 particles in my cleanroom. What the heck does that mean? Is my cleanroom going to implode?”

Okay, that may be a slight exaggeration, but we often receive calls and emails from customers who are concerned and confused by the numbers displayed on their particle counter.

A particle counter, particularly a handheld unit, has limited screen space to work with. In order to accurately report on large numbers of particulates the particle counter uses scientific notation to display the results. Scientific notation is not unique to our particle counters, it's a universal system used by scientists to easily handle very large numbers or very small numbers. Let's take a look at that particle count result again and break it down.

$$1.56 \text{ E}5 / \text{m}3 \quad \text{or} \quad 1.56 \times 10^5 / \text{m}3$$

To save room the particle counter abbreviates $\times 10^5$ as E5. That E5 after the 1.56 is telling you how many places you need to move the decimal point to the right, in this case 5 places. So $1.56\text{E}5 = 156,000$.

Here's a few more examples:

$$\begin{aligned} 2.78\text{E}3 &= 2780 \\ 1.90\text{E}6 &= 1,900,000 \\ 6.74\text{E}2 &= 674 \end{aligned}$$

So now you know how to read the results on your particle counter. We can't say if the number is good or bad for your cleanroom or controlled environment. You need to refer to ISO, GMP or whatever standard you're certifying too to confirm if the number is acceptable.

You can read more about scientific notation on Wikipedia if you'd like to learn more: https://en.wikipedia.org/wiki/Scientific_notation.



*Handheld Particle Counters:
Model 3887 & 3886*

About Kanomax USA, Inc.

Kanomax has delivered the best measurement solutions in its products and services that adapt precision measurement technology for fluids and particles. Kanomax product lines include anemometers, particle counters, dust monitors, and IAQ monitors. Kanomax is contributing to technological innovation and quality improvement for the processes of quality management, environment management, and technology development in the areas of environment, health, and energy, which are essential to sustain human well-being, as well as in other industrial areas including automobile, aerospace, semiconductor, electronics manufacture, heavy industry, steel, shipbuilding, pharmaceutical, biotechnology, food-processing, medical, construction, and civil engineering.



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