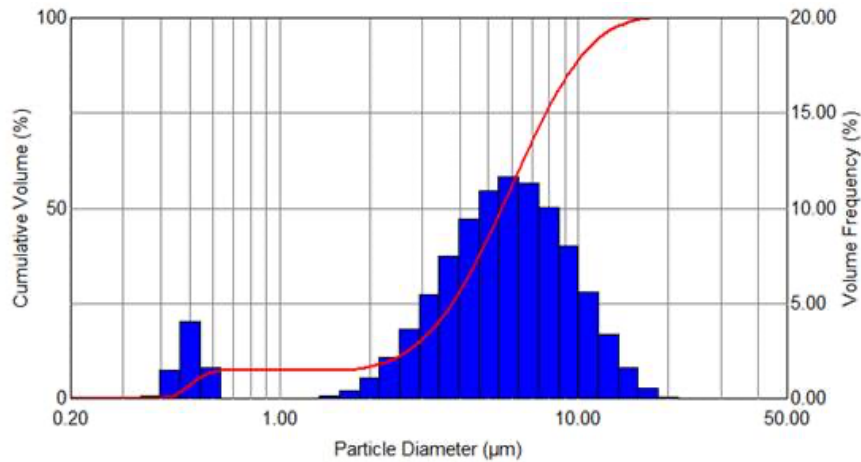


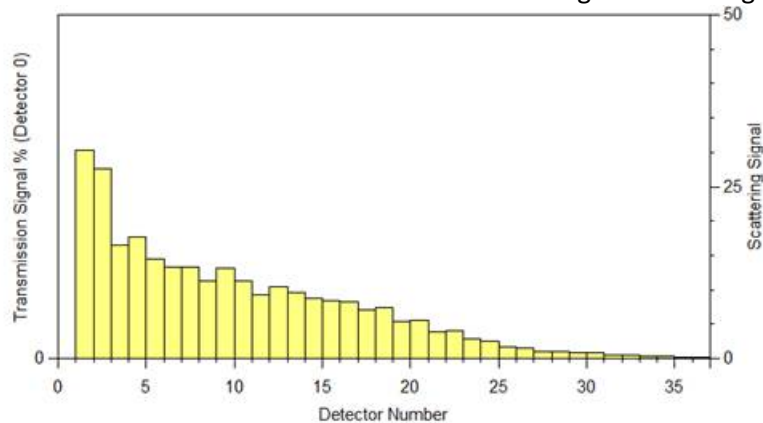
Spraytec ambient light

This looks like there is an issue with ambient light around the spraytec. In this PSH you have individual PSDs such as

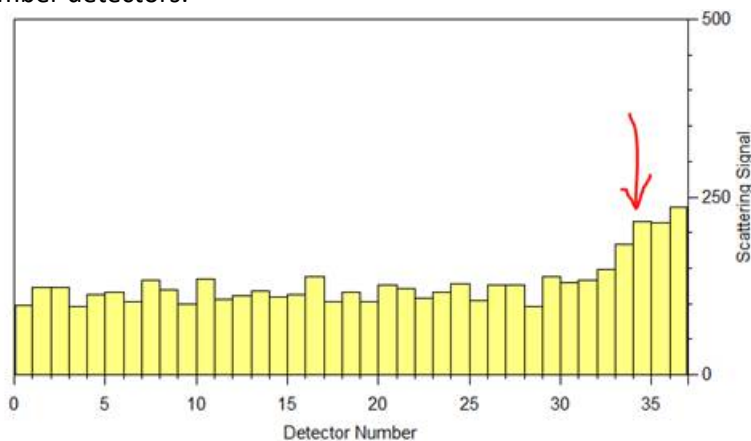


And there are enough of these that a submicron contribution can persist in the phase average. The submicron peak varies between each time point in the PSH, suggesting that it is noise.

The source of the noise can be seen from the background. The light background is good:



But the dark background (or electronic background) shows increased signal on the high angle, high number detectors:



This dark background is typical of ambient light scattering in to the receiver. It often varies during the measurement, leading to noise on the affected detectors, which in turn, is interpreted as very small particles by the spraytec.

Ambient light may be caused by sunlight, other instruments in the lab, or analysts walking past. The position of the spraytec in the lab at Malvern is fixed by the position of the extraction point. It means the spraytec faces the window. Even though there are blinds on the window, I know that if I move position during the measurement, I will change the dark background and on the worst days (it depends on the weather) I can see this in the PSD. I set up a spraytec for a customer in a very large lab and the receiver faced in to the centre of the lab. We found that when someone walked past, 10m+ away, the light levels changed and could be detected. That one we solved with a simple piece of cardboard behind the spraytec.

To address ambient light consider:

- Turning off overhead lights
- Closing window blinds / installing blackout blinds
- Angling the spraytec or moving it to a different position entirely
- Installing screens behind / over / around spraytec

Have a think about the position of spraytec in the lab to see if you can change the ambient lighting. If you need further suggestions, let me know.