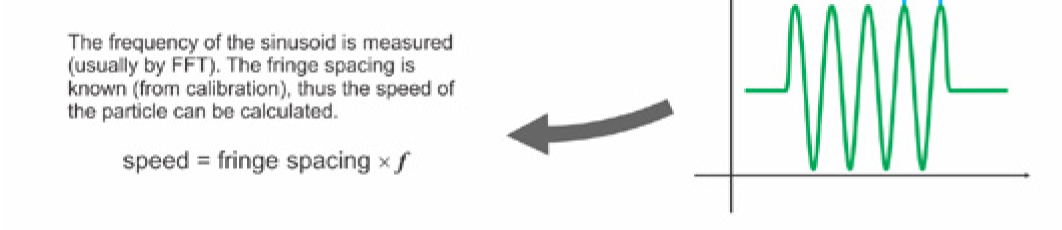
EXHIBIT 2007



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Probe Volume Characteristics

The two beams must be focused at the probe volume to 1) create the smallest possible intersec (increasing the "brightness" of the light reflected by the particles), and 2) to ensure that the spac the fringes does not change much inside the probe volume. This critical alignment is easily main design of the miniLDV because both arms of the interferometer go through the same individual

There is always some "fringe divergence" as it is physically impossible to build a system in which spacing is absolutely constant within the probe volume. This is because the wavefront radius of (according to beam propagation theory) is only zero at the waist, which is the exact focal point o of MSE's LDV products are built to achieve the minimum possible fringe divergence.

Fundamentally an LDV or LDA uses the same Doppler effect that causes the siren from an amb by to change pitch—except that here the Doppler effect is with light, not sound. However, there to interpret how an LDV or LDA is able to measure the speed of an object. The more intuitive ex figure) goes as follows.

How Speed is Measured

The fringes formed by the interference of the beams is a pattern of light in space. When a partic through the probe volume, it goes through the light and dark regions, so if its reflected light is m travels along, the intensity versus time curve looks like a sinusoid with a Gaussian envelope. Th envelope comes from the fact that the intensity of the beams is Gaussian in nature. The sinusoi physical travel of the particle through the fringes. The physical distance between the fringes is k calibration which is performed with every probe. So the frequency of the intensity signal is direct to the velocity of the particle: velocity = fringe spacing x intensity frequency.

Although perhaps less intuitive, the measurement still works if the object passing through the pr a continuous surface. This is because the probe volumes are so small that any microscopic feat surface will reflect different amount of light and behave almost as if the surface were a stream o particles.

To measure the velocity of fluids like air or water, there must be something in the fluid to reflect l air the particles can be as small as the smoke particles of an incense stick; for water, sometimes enough signal straight out of the tap.

"D" is for Doppler

The second explanation reveals how the "Doppler" in LDV/LDA comes about.

Frequency Shifting and the Determination of Direction

When two beams are crossed in space as in a classical LDV/LDA, the interference pattern is ste space. This means that 1) it is impossible to know if the particle was traveling from left to right or and 2) it is impossible to measure very low velocities, because it will take too long for the particle through a bright and dark region (alternatively, the beat frequency is too low).

The trick is to add a Doppler shift to the beams themselves. When an LDV has "frequency shiftin already have a frequency difference when they are in space, so if a particle has velocity zero, th signal will have the same frequency as the difference in frequency between the two beams.

The effective frequency of the signal is the sum of the frequency due to the particle and the shift when a particle is going one way, it will add to the shift frequency; going the other way it will subt has velocity zero it does not change the shift frequency at all. Viewed another way, the fringes a space, so the actual measurement is the velocity of the particle relative to the velocity of the frin miniLDV can be ordered with or without frequency shifting. For ultra-stable frequency shifting ap measure extremely low velocities), MSE offers the ultraLDV line.

It should be noted that any LDV or LDA measures only the component of velocity along the dire interference pattern—so the instrument must be aligned to the flow (or some known direction so adjustments to the results can be made). MSE also offers multi-component systems: the 2D min miniLDV.