Advanced Optical Measurement Systems
The Developers Of Advanced Spray And Particle Monitoring Systems

Application Note – SpraySpy®

In-situ Drop Size Measurements in Wind Tunnels

Numerous wind tunnels are outfitted with spray bars to introduce drops into the flow upstream of test objects. Prominent examples include icing wind tunnels and automobile wind tunnels for investigating vehicle soiling. Of utmost importance for analyses of such measurements and subsequent comparison with numerical simulations is reliable information about drop size, velocity and number density immediately prior to drop impact with the test object. Measurements of drop sizes immediately behind the spray nozzles, either in the wind tunnel or external, are seldom indicative of real conditions at the point of impact.

SpraySpy®, by AOM-Systems GmbH, allows in-situ measurements of drop size, velocity and number density directly at the test object. This eliminates uncertainties of impact conditions arising from capture efficiency, drop evaporation or size distribution variations due to flow field effects.
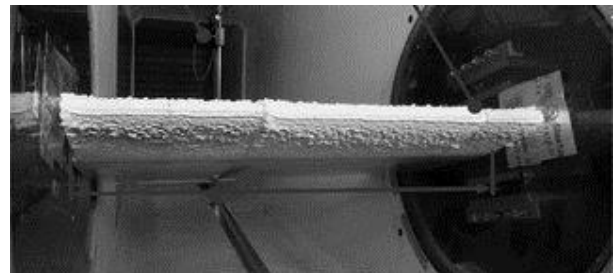

Source: Researchgate.net

The **SpraySpy®** instrument can be mounted directly in the wind tunnel, able to withstand the local temperature and liquid water content conditions being tested. Working in backscatter, the SpraySpy® requires only simple traversing hardware, is easy to install, requires no alignment and allows comprehensive measurement campaigns to be conducted rapidly.

Source: TU Darmstadt

Researchers from the Technical University Darmstadt (Germany) performed a field test in an automotive wind tunnel, from a leading German car manufacturer, outfitted with spray bars in nozzle region. The goal of the test was to measure the distribution of drops immediately prior to impact on the side mirror. The researchers report that the **SpraySpy®** device was able to deliver reliable measurement results with very low setup effort and a minimum of wind tunnel operation time.
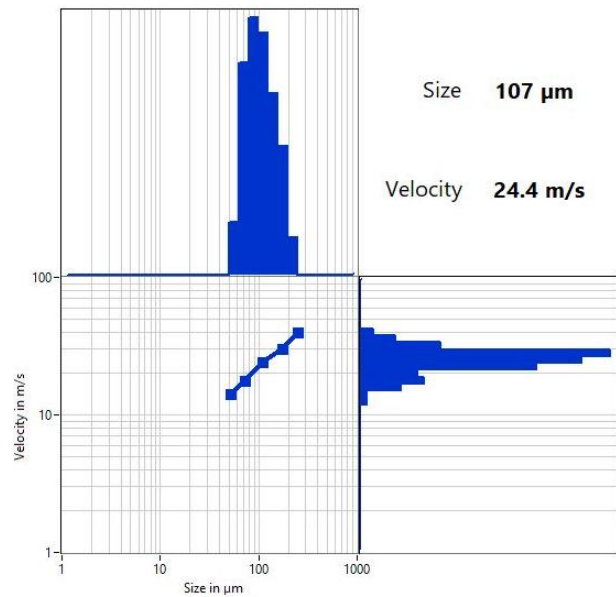
Source: TU Darmstadt

For further information please visit www.aom-systems.com and contact us via info@aom-systems.com.