

Long Baseline Optical Anemometer (LOA-004)

Path-Averaged Crosswind & Turbulence Sensor



The Long Baseline Optical Anemometer and Turbulence Sensor (P/N: LOA-004) is a highly specialized instrument designed to measure the path-averaged crosswind and turbulence along a particular distance. Optical Scientific designed LOA for outdoor monitoring in many applications. Set up is quick and easy. The LOA mounts on tripods. The sensor is completely eye-safe so it can be in public areas without intrusion or endangering bystanders. The LOA is great for many critical outdoor applications in the areas of environment and safety (see below):

Emergency Response - As an emergency response tool, the LOA provides key crosswind data for perimeter monitoring. Whether the concern is chemical or biological agents, the LOA can measure the general crosswind to help officials track a dangerous plume. In Colorado Springs, the local police used the LOA to measure the crosswind on a highway where insecticide spilled from a truck accident. A major suburban development was on one side of the highway. Officials were concerned the chemical was drifting into the neighborhood and thus evacuation would be necessary. The LOA was called into action. Within minutes the instrument was set and running. The LOA showed that the wind was actually blowing in the opposite direction – away from the homes. Thanks to the LOA data, officials knew the best course of action right away.

Fence-line Monitoring - The LOA is great for outdoor environmental monitoring where general mass emissions measurements are required. The combination of LOA results and chemical analyzer data produces important mass flow information for the chemical of concern. The focus area can be an active industrial site, a brown field, a swamp, sanitation facility, or an agricultural site. It does not matter. The LOA will provide key crosswind data along a border or fence-line to allow the user to calculate mass emissions. The US EPA liked it so much; the agency bought one for flow studies on hog farms. ALCOA used the LOA to measure HF flow out of their side vents at smelting facilities. The official numbers overestimated the flow. The LOA measured lower airflow readings. As a result, the LOA saved them from going over their HF budget, which translated into real cash savings by avoiding fines and penalties.

Airport Safety – For years, the LOA has demonstrated many uses in the realm of airport safety. The LOA can detect wake vortex of jet engines. The wake vortex is the turbulent spiraling wind off jet engines. These tornadic flows can overturn small aircraft and dangerously disturb the course of larger airplanes, too. LOA can be used to better manage air traffic and more safely deploy aircraft by detecting wake vortex. NASA and the FAA sponsored tests at both JFK and Dallas International Airports, which showed the LOA was highly successful in this application. The LOA can also be used to measure microbursts, downdrafts, and wind shear.



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