Ground Fog and Haze Aerosol Spectrometer with Polarization Detection

The Ground Haze and Fog Aerosol Spectrometer (GFAS) from Droplet Measurement Technologies, LLC offers a revolutionary way to analyse haze and fog.



The GFAS is a compact, robust, easily deployable aerosol spectrometer that measures the size, and size distributions of aerosols as well as offering the ability to distinguish between water droplets, ice crystals, and dust within the 0.5-40 micron range.

The GFAS has been meticulously designed by experts in aerosol and droplet science to deliver high quality, intuitive data in a wide range of weather conditions.

OUTCOME

The Ground Fog and Haze Aerosol Spectrometer (GFAS) advances our understanding of visibility and air quality pollutants, (smog, haze, and dust) by shape and size. The GFAS enhances the traditional fog measurement with the addition of polarization; this provides researchers with the data to discriminate fog, haze, and dust events. This essential data helps to develop predictive models, allowing health officials to make critical decisions pertaining to regulations and alerts and overall composition of aerosols as they pertain to public health.

APPLICATIONS

- Smog and Haze studies
- Mixed and glaciated fog
- Dust events
- Marine installations on sea shores or ships to measure sea and salt spray
- Urban air quality studies
- Long field deployments
- Water harvesting

ADVANTAGES



This patented technology can discriminate droplets, ice, dust, and ash. GFAS is the only equipment offering both forward and backscattering optics for simultaneous aerosol size and shape detection. GFAS is low maintenance, requires only monthly validation checks, and is self-contained with integrated pumps, control system, and a sonic anemometer. The instrument also includes heaters and a weather enclosure which make it suitable for harsh conditions and tower mounting.

AVAILABLE ACCESSORIES

- Software: Particle Analysis Data Software (PADS), included
- GFAS Calibration Kit
- Mounting Pole/Stand
- Science Care Program
- 1 and 2 Year Extended Warranty
- Lifecycle Care Program

THE DROPLET GUARANTEE

Droplet understands how the versatility and performance of an instrument can impact your research, career, and the world we live in. As you strive to provide a better understanding of our planet, we guarantee to be here to support you through your journey.

Whether you are establishing your first laboratory or are a tenured researcher; we have a team of scientists, engineers, and technical staff available to assist with application questions, technical support, data analysis, and training.

Specifications

MEASURED PARAMETERS

- Forward and back scatter
- Polarization
- Windspeed
- Temperature
- Pressure

DERIVED PARAMETERS

- Particle diameter
- Particle number concentration
- Polarization ratio
- Liquid water content
- Effective diameter
- Median volume diameter
- Particle size range: 0.5µm-40µm
- Number of size bins: 30
- Typical sample area: 0.24mm²
- Sample flow volume: 1m³/min

ENVIRONMENTAL OPERATING CONDITIONS

- Temperature: -30°-45°C
- Altitude: 0-4,000 meters
- Relative humidity: 0-100% non-condensing
- IP65 rated, robust for a wide range of weather conditions.

DATA SYSTEM AND POWER REQUIREMENTS

- Data system interface: Ethernet
- Data Rate: Selectable, 0.04-20 sec
- Power requirements: Universal Power Supply, 85 – 265 VAC / 50/60 Hz / 600 W