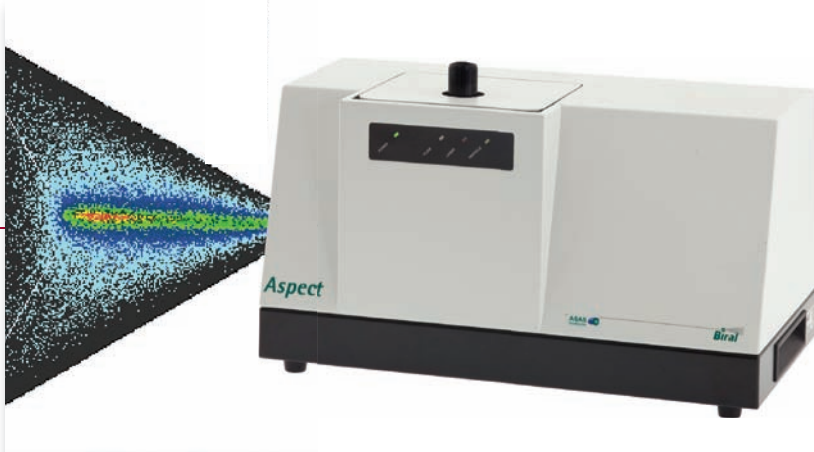


ASPECT – Aerosol Particle Size and Shape Analyser



AEROSOL SCIENCE

Provides real-time measurement to characterise aerosols for size, shape, mass concentration and number. Fluorescence measurements are also available when used with the AFS.

ENVIRONMENTAL

Provides real-time data for the multi-parameter characterisation of both natural and pollutant particles in the atmospheric aerosol.

Particle Size Concentration + Shape

The ASPECT characterises particle Shape and Size distribution in aerosols

array provides a measure of the geometric symmetry of the particle. The intensity of the light scattered at the wider angles is also used to optimise the sizing algorithm.

ASAS⁺ Software

The *Aspect* comes with easy to use ASAS⁺ plug and play software giving full instrument control from your PC with enhanced data display and rapid analysis tools.

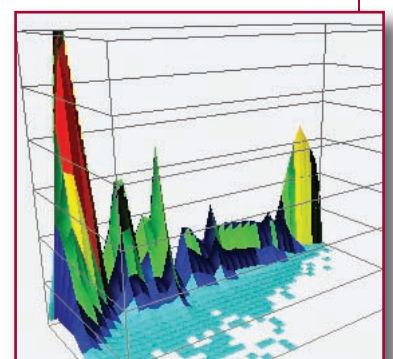
ASAS Technology

The *Aspect* uses proprietary ASAS technology. The focus of a laser beam and a linear stream of particles intersect at the primary focus of an ellipsoidal reflector. Light scattered at narrow forward angles is collected through an axial hole in the reflector and the measured intensity is used in the particle size measurement algorithm. The light scattered at wider angles (to 140°) is collected by the ellipsoidal reflector and imaged on to an array of detectors. The cylindrical symmetry of the scattered light as measured by the detector

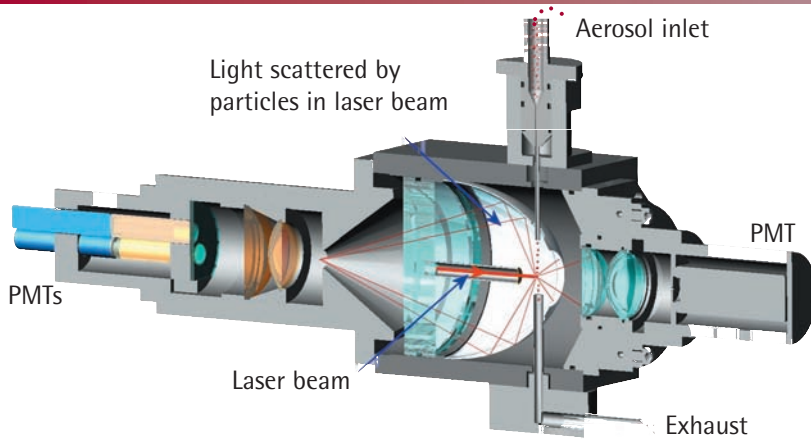
Shape Measurement

A sphere scatters light with equal intensity at equal azimuthal angles around the axis of the incidental light beam such that the detectors (photomultiplier tubes, or PMTs) in the array receive equal amounts of light. Particles with irregular shapes scatter light such that unequal amounts fall onto the PMTs. The ratio of light falling on these detectors is used to define the asymmetry factor (Af) for each particle.

A spherical particle is by definition symmetrical about all axes passing through its centre and is assigned an Af of zero. An infinitely long fibre is assigned an Af of 100.



ASPECT - Aerosol Particle Size and Shape Analyser



PHARMACEUTICAL AND POWDERS
Provides geometric data on the crystalline form and sphericity of manufactured aerosols and powders.

CLIMATE PHYSICS
Differentiates ice crystals from water droplets in cloud studies.

POLLUTION CONTROL
Provides real-time data for source apportionment and the tracking of pollutants.

Technical Specification

Power supply	90 V to 264 V AC, 47 - 63 Hz, 5 A maximum
Communications link	USB 1.0 or USB 2.0
Maximum particle throughput	20,000 particles per second (\equiv 1,200 p/cc)
Particle size range	0.5 μ m to 20 μ m
Number of size channels	40, 0.5 μ m resolution
Asymmetry factor	0 - 100
Number of asymmetry channels	20, 5 Af units resolution
Sample flow rate	1.0 litre per minute (\pm 10%)
Total instrument flow rate	approximately 6.5 litres per minute
Aerosol inlet outside diameter	25 - 28 mm
Instrument exhaust (filtered air)	6.35 mm (1/4") od stainless steel tube
Dimensions	H 305 mm x W 487 mm x D 303 mm
Weight	20 Kg
Operating system	MS Windows 7 recommended or Windows XP
System requirements	1 GHz processor and 2 Gb RAM
Available hard disk space	1.5 Gb
Graphics	Direct X 9 or super VGA graphics device
Monitor	800 x 600 minimum pixel resolution

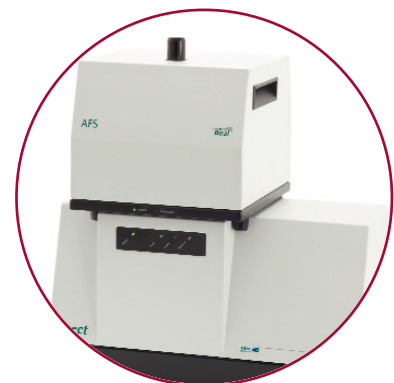
Manufactured by:

Biral

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The ASPECT can be expanded to measure intrinsic fluorescence of bioaerosols in real time



Biral's Aerosol Fluorescence Sensor (AFS) provides the capability to measure intrinsic fluorescence of aerosols.

Biral