



AFS Aerosol Fluorescence Sensor

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We look forward to
hearing from you

Biral has developed an **Aerosol Fluorescence Sensor (AFS)** for intrinsic fluorescence measurements on aerosols. The sensor can be used as a stand-alone instrument or as an attachment to Biral's **Aspect** aerosol size and shape analyser so providing enhanced measurement capability.



Applications include:

- research into disease transmission
- detection of atmospheric pollutants
- fluorescence of organic aerosols including ultrafines

The **Aerosol Fluorescence Sensor** can detect aerosols much smaller than is possible with single particle fluorescence instruments because it measures the volume of aerosol rather than the individual particles.

SUPPLIERS OF QUALITY INSTRUMENTS FOR OVER 30 YEARS



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Basis of Operation

The **Aerosol Fluorescence Sensor** continuously measures the fluorescence response from a volume of aerosol employing identical fluorescence technology and components as used in Biral's VeroTect biological warfare agent sensor selected by the UK MoD.

The **AFS** works on the principle of Ultra-Violet Light Induced Fluorescence (UV-LIF) targeting the fluorescence response from common amino acids found in living matter. The sensor uses an UV optical source to illuminate an airstream flowing through the sensor detection volume. The induced fluorescence is collected and imaged on to two wide band fluorescence detectors, enabling a generic discrimination between different aerosol populations. The sensor illuminates a volume aerosol sample and as a consequence the fluorescence measurements provide information about the average aerosol population, and enables changes to that population to be systematically mapped.

The sensor is controlled via a software suite that enables the sampling rate to be adjusted in order to increase the resolution of the data. The data files can be saved for replay at a later date and can be used as evidence that a change in the aerosol population has occurred and to substantiate the nature of that event.

SPECIFICATIONS of the Aerosol Fluorescence Sensor	
UV excitation source	280 (+20/-40) nm
Fluorescence detection channel 1 (designated UV)	330 - 650 nm
Fluorescence detection channel 1 (designated visible)	420 - 650 nm
Detection volume	2.5 ml (cm-3)
Size	30 x 28 x 24 cm (L x W x H)
Weight	5.3 kg (11.3 lbs) approx
Power supply (optional DC powered version is available)	90 - 260 VAC (47 - 63 Hz)
Power connection type	IEC 950
Temperature range	+ 5 to + 30 ⁰ C
Humidity range	0 to 95% RH