

## Seta AvCount2 Particle Counter

**IP 565:** Determination of the level of cleanliness of aviation turbine fuel - Portable automatic particle counter method

**ASTM D7619:** Standard Test Method for Counting and Sizing Particles in Light and Middle Distillate Fuels and Liquid Bio Fuels by Automatic Particle Counter

**ASTM D975; DEF STAN 91-91, 91-86, 91-87, 91-88**

**Other standards include:** ISO 4406 (1991 & 1999 issues), GOST 17216, NAS 1638, SAE AS4059E, SAE A6D, SAE 749D, GB 5930, GJB 420-1987, GJB 420-A-1996, GJB 420B-2006

## Key Features

- Particle size ISO 11171: 4µm(c) to >70µm(c); ISO 4402: 2µm to >100µm; GOST 17216-71: 2µm to >200µm
- Cumulative & distributive particle numbers
- Particle count on cleanliness code
- Uses “Straight from the Bottle” samples
- Precise and reliable results
- Easy to use large touch screen display, integrated printer
- Rugged, stainless steel case suitable for laboratory or portable use
- Typical test time of less than 6 minutes
- 15 fixed measuring channels (calibration in compliance with ISO MTD for measuring in oil)
- An upper and lower limit value can be set for each of the first 8 counting channels
- Integral Data storage for up to 2000 measurements across 60 memories
- Internal Double Pump System
- Optional in-line high pressure testing up to 310 Bar

## AvCount2 Overview

Laser based particle analyser used for determining the particle concentration in Liquid fuels and oils. AvCount2 can be used throughout distribution networks and in the laboratory, in fact anywhere that requires accurate determination of particle distribution in a liquid sample. Whether checking the quality of fuel, filter systems or in service lubricants, AvCount2 provides fast and precise results.

- Checks on fuel distribution & filtering
- Refinery processing quality
- Corrosion & Rust in Pipes & Tanks
- Contamination of in-service fluids
- Ingress of airborne solids
- Degraded & Damaged Hoses & Filters
- Microbiological Growth

## How AvCount2 operates

- The sample is drawn into analyser by an integral double pump
- Automatic changeover valve means that no operator intervention is required
- 10ml of sample flows at 30ml/minute through the measuring cell
- Particulate is measured by light reduction across the cell
- Light reduction is proportional to particle size
- Results are automatically reported



Results are displayed in real time and are simultaneously printed out on the integral printer. The test methods embedded in AvCount2 cover a range of fuels, lubricating oils and hydraulic fluids and can be edited to create custom test profiles.

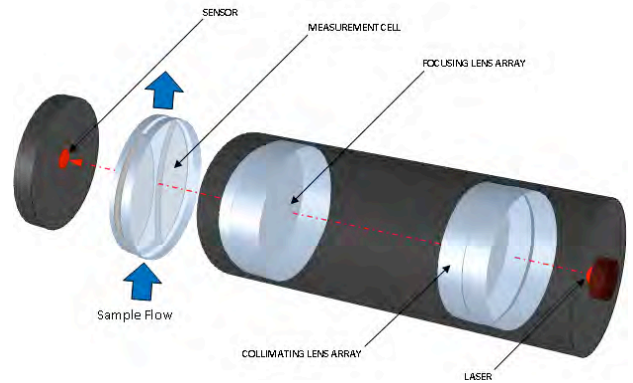
Versatile connectivity and memory management allow results to be accessed, printed out or downloaded to a memory stick or to a personal computer. The analyser can also be controlled via an RS232 port.



# Laser Particle Count - The preferred test for sample diagnosis

Particle counts are used for a wide range of applications which include fuels, hydraulic and lubricating oils, solvents, water-based fluids, compressor fluids, refrigeration, turbines, transmissions systems and many more. Results enable preventative maintenance and assist system cleanliness.

Laser particle counting uses the light emitted by a laser to illuminate a cell through which the sample is passed. Particles present in the sample cast a shadow onto the sensor within the cell, and as the particle passes across the cell the voltage output of the sensor drops. The voltage drop of the cell is proportional to the particle size and the AvCount2 calculates the size of the particle based on this principle.



## Fuel Types

- Aviation turbine oils
- Hydraulic and lubricating oils
- Skydrol hydraulic fluid
- Biofuels and biofuel blends
- Heating oil
- Gas oil
- Diesel - automotive and marine
- Gasoline and kerosine

## Particulate in Jet Fuels - why is measurement so important?

Small particles of sediment present in jet fuel can agglomerate to form scales that may affect or wear nozzles and ducts within the engine; in addition particulate contamination in the fuel may affect the quality of spray produced by the fuel injection system reducing combustion efficiencies. It is therefore important to identify and remove particulate before the fuel is pumped onto an aircraft.

Sediment contamination originates from tanks, pipelines, hoses, pumps, people, and even the environment. The most common particulates that have potential to contaminate aviation fuels are rust, paint, metal, rubber, dust, and sand. For quality control purposes sediment is classified by particle size.

For many years the Aviation industry has relied upon visual checks, known as 'the clear and bright test' to identify the presence of particulate which is identified as a haze in the fuel sample. However the naked eye can only identify sediment particles larger than 40 microns whereas the primary sediment particles that may be present in fuel are typically only 4-6 micron in size. The development of high precision engine technology, together with greater emphasis on fuel efficiency, has lead to the demand for a more precise method of determining the presence of particulate in fuels.

Laser particle counting is now a mandated test for Jet/Aviation fuel.



## Seta AvCount2 Particle Counter



## Calibration

AvCount2 utilises 16 point calibration and results are easily verified/recalibrated using NIST traceable standard solutions. Calibration can be checked at user site or at our authorised regional laboratories.

## The Complete AvCount Range

SA1000-0 AvCount	The original instrument: this is ideal for users focusing on Jet Turbine fuel and those wishing to operate/download via a computer with the log and show software
SA1200-0 AvCount	Battery version of SA1000-0
SA1000-2 AvCount2	Suitable for users testing a range of middle distillate fuels or wishing to use multiple test methods. This version of AvCount also benefits from touch screen operation
SA1250-2 AvCount2 Skydrol Version	Designed for use with Skydrol hydraulic fluid. Due to the highly corrosive nature of this material the AvCount is fitted with Isolast seals and a protective inner case

## Specifications for AvCount2

Particle Size Range:	ISO 11171: 4µm(c) to >70µm(c); ISO 4402: 2µm to >100µm; GOST 17216-71: 2µm to >200µm
Measuring Channels:	15
Counts per Measurement (max):	16.000.000
Sample Viscosity (max):	68mm <sup>2</sup> /s (from sample bottle) 250mm <sup>2</sup> /s (@10bar)
Sample Temperature Range:	0 to 80°C
Typical Test Time (IP 565):	Less than 6 minutes
Size Bands Reported During Test:	As specified in Test Method
Size Bands Reported on Recall:	All channels
Results:	Particles/ml or Particles/10ml (Test Method dependant) Cumulative and Distributive Cleanliness Codes, Cumulative or Distributive (Test Method dependant)
Cell Volume @ Flow Rate:	10ml @ 30ml/min
Total Sample Volume used (typ):	80ml (includes rinse cycles) for IP 565 & ASTM Multi fuel. 20ml other methods