

# ON-SITE OIL ANALYSIS

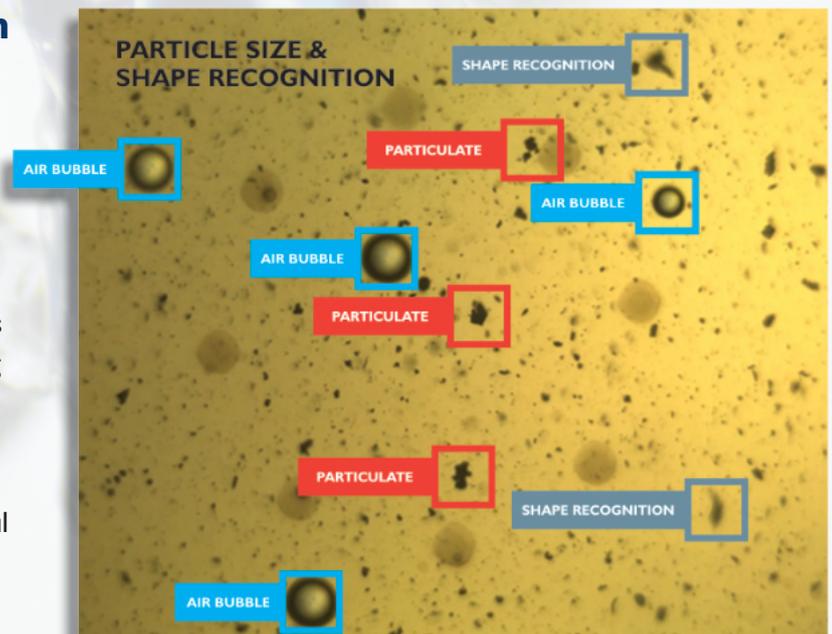
Our all new **Particle Pal Pro** utilises breakthrough digital imaging technology which provides a greater insight into the size and type of particulate in any oil system. Air bubble elimination and shape recognition gives root cause particle analysis. Oil degradation and water content sensors complete the package.



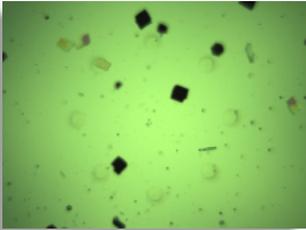
## FS9V3-OLU

**Harnessing the power of proven digital imaging technology with added oil degradation and water sensing technology**

We've embedded the latest in particle counting technology along with a viscosity sensor into our new Particle Pal Pro series. Giving ISO 4406 counts as well as 4, 6, 14, 21, 38, 70 & > 100 micron sizing and bubble elimination. Digital imaging, combined with advanced algorithms, sorts particles into fatigue wear, cutting wear and sliding wear categories to give root cause analysis. This powerful technology, when coupled with additional sensors for measuring water content and oil life, gives unprecedented, on-the-spot insight into the condition of your oil.



The image above is 4mm x 3mm and shows particulate that the human eye can't see.



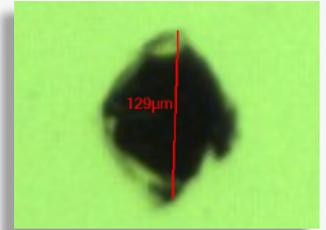
Oil enters the counter for continuous analysis and images periodically captured.



Air bubbles can be seen in images, which are size categorised and removed from particle counts.



Fibres can be visually inspected for analysis of origin.



Images can be magnified for analysis and measurements taken.



### Digital Imaging Particulate Counter

Capable of broad size determination from 4, 6, 14, 21, 38, 70 > 100 micron counts. Air bubble and water droplet elimination. Shape determination to identify fatigue, sliding or cutting wear as well as fibre identification.



### Water Sensor

Water in oil is a contaminant that can contribute to microbial growth and encourage further contamination, from solids to rust. The inbuilt water sensor shows the relative humidity of any oil as a % saturation.



### Oil Life Sensor

The Tan Delta Full Spectrum Holistic oil condition sensor monitors the overall condition of the oil, giving you unparalleled sensitivity, accuracy and precision. This enables the oil's remaining useful life to be calculated. The sensor works with virtually any oil, drawing on a database of over 280 common industrial oils with the ability to self-calibrate.



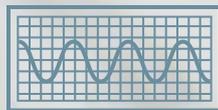
### Internal Stepper Motor Pump

We've developed a fully controllable stepper motor driven pump to deliver exact flow rates for any oil, from 1 to 2,400 cSt. The pump also allows connection to a live system up to 350bar via a high pressure adaptor.



### Spider Infographic

A multi-stage infographic helps engineers understand at a glance the condition of their oil, based on all of the data collected from the internal sensors.



### NEW Software

A 10" touch screen LCD allows users to view data in great detail, with zoom, trending and analysis breakdown. Within the software we have embedded oil ageing profiles for over 280 oils. Also included is the ability to self-calibrate an oil life profile, should your oil not be on the database. This is a one time routine where oil is taken through a heat cycle.



### Battery Life

Internal rechargeable lithium batteries provide a long life for remote use.

# OIL LIFE SOFTWARE - ALL THE METRICS YOU NEED AT YOUR FINGERTIPS IN AN EASY TO USE SOFTWARE



## Water content.

Displayed as % saturation (relative humidity). Helps inform whether an oil change is actually required.



## Oil life indication.

Over 280 oils profiled with the ability to self-calibrate. Gives early warning of oil coming to the end of its life and also helps inform whether an oil change is actually required.

## Particulate analysis.

The Atten2 digital imaging particle counter gives advanced size and shape recognition for any sample. Counting particulate in virtually any oil up to 2,400cSt, the Atten2 device also eliminates air bubbles, making it ideal for heavy lube and gear oil applications in cold temperatures. Reporting 4, 6, 14, 21, 38, 70 & > 100 micron counts as well as categorising any particle greater than 20 microns into:

- Fatigue Wear • Sliding Wear • Cutting Wear • Fibres



## Particle Pal Pro Advanced Oil Analysis - TECHNICAL INFORMATION

Fluid Compatibility	Synthetic oils, organic oils, mineral oils & diesel fuel (2,400 cSt viscosity limit)
Display Information	<b>Particulate:</b> ISO 4406, SAE AS4059 & NAS I638, bubble elimination and particle wear analysis. <b>Oil condition:</b> utilises Tan Delta's oil life sensor to determine the remaining life of any oil profiled. <b>Water sensing:</b> water is displayed as relative humidity (RH) % saturation.
Modes of Operation	High pressure live system sampling (up to 350 bar) - via a high pressure adaptor. Bottle sampling and tank sampling.
Data	All data stored locally with an option to export to CSV or PDF.