

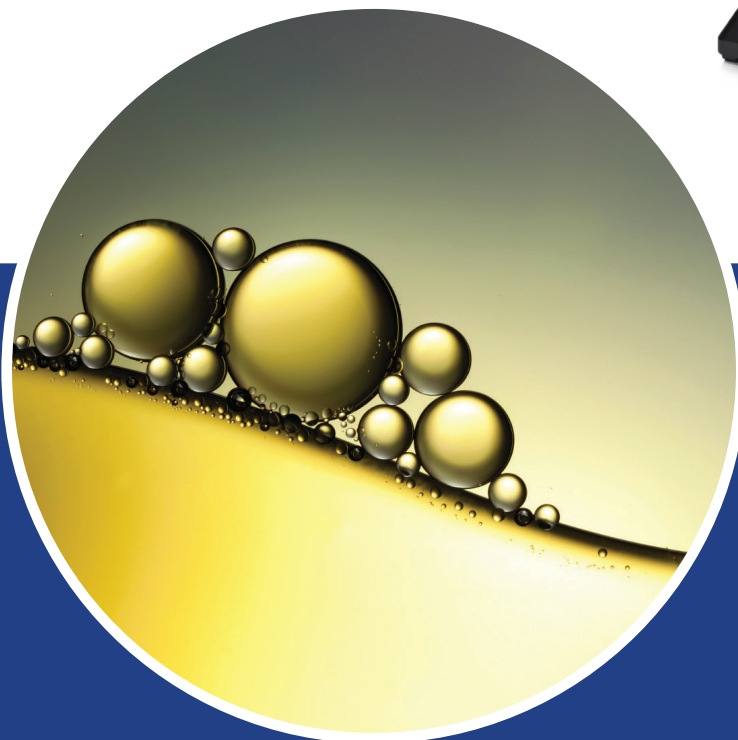
# ruler® v™

A Window into the Life of your Lubricants



Maximizing Asset Life Through Technology

Introducing  
**RULER® V™**  
Enhanced processing, higher resolution.



Oils do more than just lubricate. They are an historical archive, giving you a remarkably accurate documentation of machine events and contaminant ingressions.

*Can we access this valuable information?*

The RULER® V™ provides the full picture of a fluid's antioxidant health – it's a window into the health of your lubricant. This technology is a critical part of an effective condition monitoring program.

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**ruler® v™**

# Oil Analysis has proven to be a very effective predictive technology in the reliability toolbox.

One of the keys to this success is performing the right test at the right time. This allows one to extract as much actionable information from the sample as possible. The RULER V provides critical insight into the health of the lubricant not visible with other testing technologies.

## **ALL OILS EVENTUALLY FAIL DUE TO OXIDATION.**

In many applications such as turbines, hydraulics, compressors and aerospace, oxidation is the primary mode of failure. In these applications, the most important additive components are antioxidants. The patented RULER V uses Linear Sweep Voltammetry to quickly and accurately measure active antioxidants in lubricants and easily trend the depletion of these critical additives. With this information, you now know how much longer your fluid may last. We call this the oil's Remaining Useful Life (RUL).

In the past, indirect measurements of the fluid's antioxidants were taken. One common test is RPVOT (ASTM D2272) that examines the oxidative stability of the fluid. This technology has been shown to be less effective in today's complex formulations employing hydro-treated mineral oils and new antioxidant technologies.

Other techniques to directly measure antioxidants such as infrared analysis (FTIR) often cannot provide the full picture. FTIR interpretation is complex and some additive components mask the critical antioxidant region.

Only the RULER V provides the full picture of a fluid's antioxidant health and is the optimum window into the health and life of your lubricant. RULER® technology is a critical part of an effective condition monitoring program. Using the RULER V extracts the maximum historical data from your oil allowing your organization to make better decisions in the future.

## **INDUSTRY SUPPORT**

Be comfortable that your RULER V investment is supported by industry, the RULER technology has received strong industry support over the last 15 years. There are four ASTM standards written around it (D7590, D6971, D6810 and D7527) as well as industry guidelines (DASTM4378 D6224 and DIN - VGB M416). Major equipment OEMs such as Siemens and GE recommend RULER as part of a condition monitoring program. Furthermore, most oil and additive manufacturers use the RULER technology as both a condition monitoring and research tool to gain further insights into their lubricant formulations.



# FEATURES



## **RUGGED YET REFINED**

- Brilliant 7" display works in full sunlight or in the laboratory.
- IP 54 rating and 4 ft (1.2m) drop specification

## **INNOVATIVE FEATURES**

- Microphone allows you to dictate relevant sample data rather than having to type it in.
- Built-in 8 megapixel camera can take pictures to add to your report. Built-in report template also provides space for integration of the MPC patch picture and comments.
- All of this elegance and durability, yet it weighs less than 1.5lbs (0.7kg)

## **RULER V™ Test Solutions**

Various engineered RULER V Test Solutions allow you to test many different types of oils and applications. Our consistently high quality test solutions ensure high instrument precision and repeatability. The RULER V Test solution vials are pre-packed in a case of 144 units.



#### QUICK & CONNECTED

- Lightning fast, Windows 10 IOT 64 bit, Windows 10 Pro 64bit, Windows 8.1 Industry Retail Pro 64bit driven by Intel® Atom® X7-8750 1.6 Ghz with the burst freq. @ 2.56Ghz
- USB 2.0 port, wireless and Bluetooth connectivity allows you to connect the RULER V to a wide range of peripherals such as printers
- Integrated RDMS IV software that allows you to do all of the analysis and reporting directly on the RULER Tablet.
- WLAN 802.11 a/b/g/n allows internet accessibility with the capability of downloading software updates and other technical support.

#### The RULER V Package

- RULER V Instrument with Probe and USB Communication Cable
- Carrying case for optimum protection during field use of instrument
- Integrated RDMS IV Software (RULER Data Management Software)
- 100-240VAC Power Adapter
- Micropipettor (200-500 microliter) with disposable tips
- Cleaning material: alcohol pads and tissue wipes
- User Manuals for the RULER V device and RDMS

#### Test Solution Types



##### RED SOLUTION

Turboprops &  
Aviation Turbines



##### GREEN SOLUTION

Hydraulics &  
Industrial Lubrication



##### BLUE SOLUTION

Gas & Diesel  
Engines



##### YELLOW SOLUTION

Steam  
Turbines





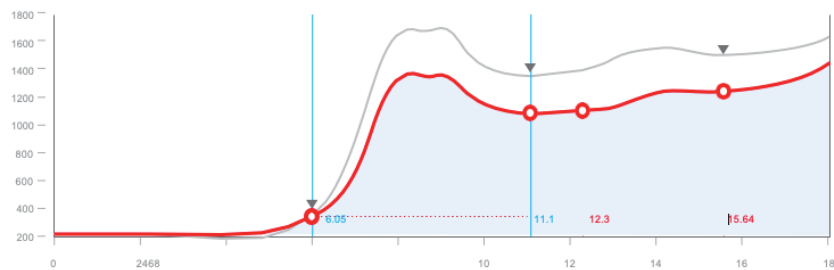
# **RULER® V™ brings another level of predictive maintenance to the plant floor.**

## **RULER DATA MANAGEMENT (RDMS)**

RDMS IV is the latest software release designed to maximize the value of your RULER Tablet. The software allows you to handle an unlimited number of samples in a database. In addition, multiple databases and graphs can be open at one time. New functionalities such as floating graphs and copying/pasting between databases and displaying/sorting results provide flexible options for managing your data. A shortcut allows you to easily export graphs or data to create reports in other software. RULER results can now be compared regardless of the standard used. You also have the option of reporting the percentage of remaining antioxidant compared to a new lubricant standard or simply reporting the amount of antioxidant remaining.

**ruler® v™**





The RULER V generates a voltammogram, identifying the type and quantity of healthy antioxidants in the lubricating oil or grease. This information provides a window into the Remaining Useful Life of your lubricant.

Equipment ID: TG5

○ Area: TG5  
— Sample: TG5

▼ Area: Gas Turbine Oil VG 32  
Standard: Gas Turbine Oil VG 32

# RULER® V™

## Technical Specifications:

Core System	
Operating System	Windows 10 IOT 64bit, Windows 10 Pro 64bit, Windows 8.1 Industry Retail Pro 64bit
Processor	Intel® Atom® X7-8750 1.6 Ghz with the burst freq. @ 2.56Ghz
	Memory: 4GB DDR3L    Storage: 64GB
Display	
	Sunlight viewable hardened touchscreen landscape or portrait orientation passive stylus or finger operation 7" :1280 x 800px
Sensors	
	Light sensor for auto backlight adjustment. Position sensor (accelerometer) for screen orientation
Communication	
WLAN	Summit 802.11 a/b/g/n
Wireless USB	Video/data/audio
Bluetooth®	4.0+LE (Class2)
Expansion Slots	
	4 x USB ports 1 x Serial port 1 x LAN with VGA port
Camera	
	8-MP color camera with flash and barcode decoding capabilities
Software	
	Windows® 10 RDMS IV Tablet
Power	
Primary internal	8000mAh, 3.7V
Dimensions	
	8 x 5 x 1.3 inches 203 x 127 x 330 mm
Regulatory	
	EMC & Safety: FCC Class B, CE, UL Dust & Water Proof: IP54 Front Bezel
Environment	
Operating temp	0°C ~ 40°C (32°F ~ 104°F)
Drop	4 feet (1.2m) drop specification
Sealing	IP54 certified
Humidity	20% ~ 80% RH non-condensing



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