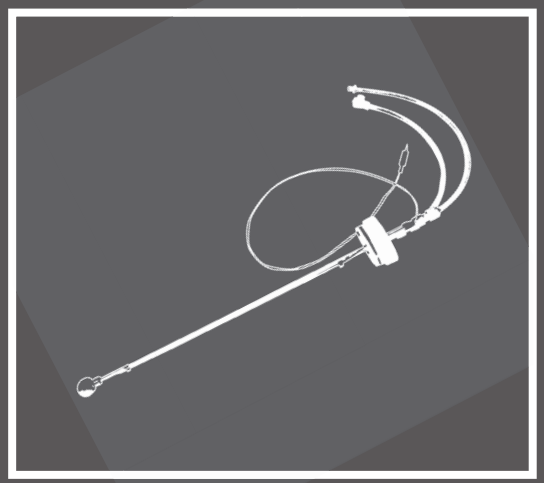
StoneDDI

Stone Digital Detection Imaging Diffuser Calibrator

VISAYA

Measuring Foaming Tendency

In order to perform foam stability and foaming tendencies of lubricant oils according to standardized methods such as ASTM D892 and D6082 and IP 146 a tightly controlled flow of gas (typically air) is dispersed into a measured volume of the test liquid at pre-determined conditions of time and temperatures. The ability to create foam is directly associated to several factors, among them the nature of the oil and the efficiency of the diffuser to entrain air in the lubricant formulations. This property directly impacts the quality of the analysis as careful calibrations are key in the overall performance of the tests.



Scope of the Analysis

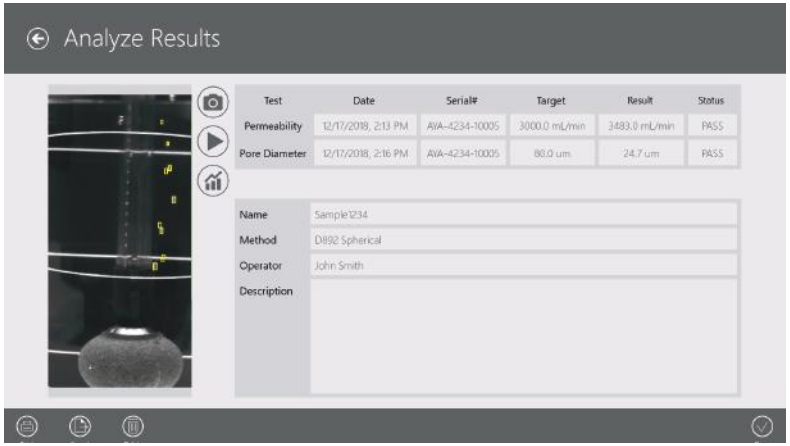
The determination of the foaming characteristics of lubricating oils at 24°C, 93.5°C and 150 °C, empirically rate the foaming tendency and the stability of the foam that might be formed in normal operations. The system is also capable of performing Foaming Characteristics at any temperature and regime conditions with equal ease. In both standard methods FoamDDI eliminates confusion on procedure interpretation and guarantees compliance with test temperature requirements as well as compliance to the exact definitions of kinetic and static foam performing the measurement at the correct times.

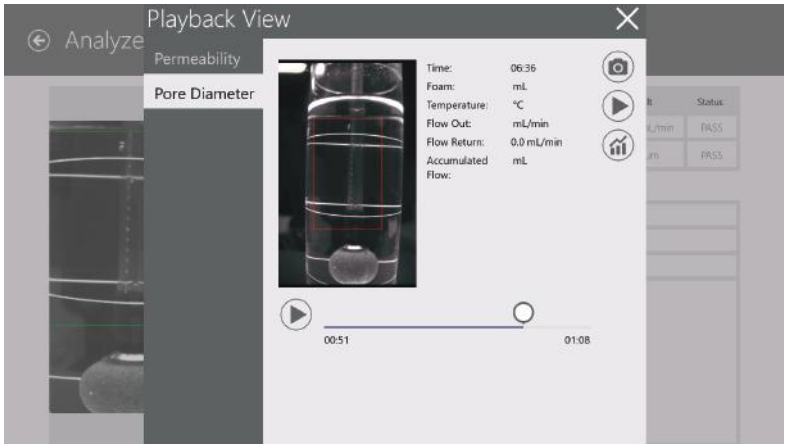
StoneDDI Design Characteristics

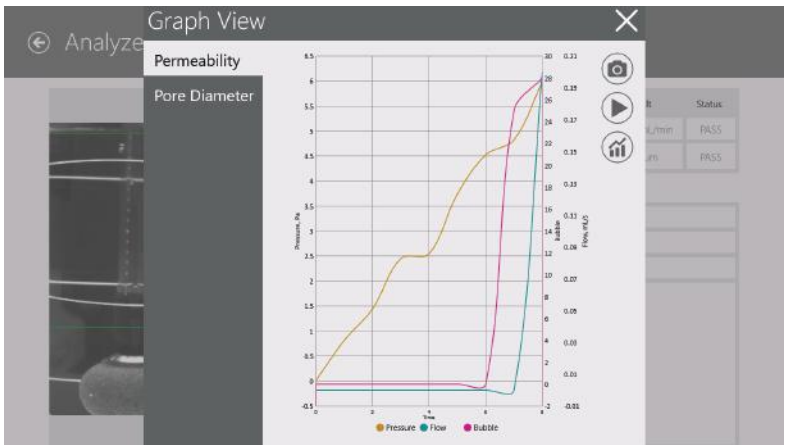
Stone Digital Detection Imaging Apparatus (StoneDDI), can easily provide for unbiased and reliable measurements of pore size distribution and flow rates of plastic, ceramic and metallic diffusers of different shapes and dimensions. StoneDDI consists of a system for sample conditioning, and testing. It is equipped with a high-resolution CCD camera, and a reader unit which possesses a state-of-the-art optics which together with the VISAYA FoamDDI algorithm accurately determines pore diameters and size distribution of them to unambiguously and reproducibly calibrate them. The high precision and accuracy of the calibration guarantees the precise control of air flows and procedural steps, demanded by the standard methods with minimal operator manipulation and the elimination of the critical timing involved in the manual assessment. Calibrations are characterized by a high repeatability and reproducibility. The automatic system produces simultaneously plots, pictures and videos allowing to visually and integrally characterize your analyzers.

The calibrator automatically measures the pressure in Pa, converts it in mm H2O and the Diameter is calculated by the equation: D = 8930/(PmmH2O-80) for metallic diffusers utilizing isopropanol as the diffuser medium. The permeability is considered to be equal to the Flow Rate measured at 2.45 kPa of pressure.

The flow meter calibration can be visually expressed as the reading in mm vs. the flows measured at center of flow.







A Better Rating

StoneDDI's improvements over current test rating output and analysis include:

- Easy to Use Touch Screen Driven Software
- 1-2-3 Button Operation!
- Logs digital image and video for manual review
- Integrated Industrial Computer for Easy Interface with Network
- Direct LIMS Connectivity
- USB, Ethernet and HDMI Outputs
- Stores Results for Transfer to PDF reports & Email

A Better Method

StoneDDI's improvements over current test procedures and end results include:

- Removes Inherent Bias with Measurements
- Small foot print with integrated heating and cooling
- Automatic Detection of proper fill volume
- Graphing of FOAM and Temperature
- Ability to measure both Static and Dynamic Bubbles
- Long Lasting LED Light Source

A Better Sample handling

StoneDDI's improvements over current test sample handling and errors include:

- Single module for both heating and cooling
- Less manual manipulation of sample
- Innovated Teflon Stopper for superior sealing
- Integrated temperature sensor.
- Integrated Mass Flow Totalizer for exit air

Technical Specifications

APPLICABLE TEST METHODS	ASTM D892
OPERATIONAL MODE	Pore Diameter, Permeability, or Both
DIFFUSER TYPES	Non-metallic Spherical, metallic Cylindrical
DISPLAY UNITS	Flow mL/min , Pressure kPa
DETECTION METHOD	Patent Pending CCD Digital Detection and Mass Flow Meter over Electronic Pressure Control
PRECISION	+/- 0.06L Flow, +/- 0.08 kPa
OPTICAL DESIGN	Patent Pending Optical Arrangement
LIGHT SOURCE	LED Red (600nm)
MEASURING TIME	Operation mode dependent
CALIBRATION	Flow, Pressure, and Camera
DISPLAY	10.1” Projective Capacitance Touch (Multi Touch)
OPERATING SYSTEM	Modern Embedded Windows 10
INTERFACE	Ethernet x2, USB 3.0 x1, USB 2.0 x2, HDMI, VGA Serial, USB Printer, USB Mouse and Keyboard
MEMORY / STORAGE	64 GB SSD Storage
TEMPERATURE RANGE	15° to 35° C
HUMIDITY	Up to 85% Non-Condensing
POWER REQUIREMENTS	StoneDDI: 110/120VAC, 50/60Hz 3.2A or 220/230 VAC 50/60 Hz 1.6A, IPC Logic Control Box: Auto-switching 90 ~ 264VAC, 47 ~ 63Hz, 280 Watt Power Supply
MATERIALS REQUIREMENTS	40 psi Instrumental Grade air
SPACE REQUIREMENTS	80 mm (3”) on Sides and Back. Sides 1”, Back 6”
DIMENSIONS (W X D X H) MM (INCHES)	StoneDDI: 508 x 228 x 635 (20 x 9 x 25”) IPC Logic Control Box: 304 x 254 x 152 (12 x 10 x 6”)
GROSS DIMENSIONS & WEIGHT	StoneDDI: Weight 10 Kg. (22 lbs.) 400 x 350 x 530 mm, 15 Kg. (15 x 14 x 21” 35lbs.) IPC Logic Control Box: Weight 3 Kg. (7lbs.) 355 x 355 x 254 mm, 4Kg. (14 x 14 x 10” 10 lbs.)

FULL SPECS AND OPTIONS AVAILABLE AT WWW.VISAYAINC.COM

Accessories

1st Year

StoneDDI - Graduated Cylinder with Glass Joint

PTFE Stopper & Temperature Sensor Assembly

Certified Cylindrical Gas Diffuser (Metal or Stone)

Teflon Sealing Washer - D892

Replacement Air Inlet Tube for FoamDDI

4 Position Test Cylinder Rack

Filter, Regulator and Dryer System for FoamDDI

Replacment Air Filters (Qty 2)

QC/Validation or for calibration of camera, size detection and motor position.
Supplied in storage case with certificate valid for one year.

2nd Year

StoneDDI - Graduated Cylinder with Glass Joint

PTFE Stopper & Temperature Sensor Assembly

Certified Cylindrical Gas Diffuser (Metal or Stone)

Teflon Sealing Washer - D892

Replacement Z-Drive - Supplied with Camera Mount

Automated Diffuser Stone Calibrator. Automated diffuser stone calibrator

Replacment Air Filters (Qty 2)

VISAYA Products

AgDDI
Silver Digital Detection Imaging

AgDDI provides standardization to the current visual determination as referred in ASTM D7671 and gasoline fuel specification ASTM D4814 while using a four-step automated vision algorithm and classification process to eliminate user bias.

CuDDI
Copper Digital Detection Imaging

CuDDI's simplified, breakthrough procedure provides improved ratings, methodology and sample handling to ASTM D130. Using a corrosion detection range of 1a through 4C, outcomes are digitally recorded and seamlessly integrate with LIMS software.

FeDDI
Iron/Rust Digital Detection Imaging

FeDDI provides an complete automated method, which replaces the inherently difficult visual quantification referenced in NACE TM0172 and ASTM D665 while using a four-step automated vision algorithm and classification process to eliminate user bias and provide repeatable results.

FoamDDI
Foam Digital Detection Imaging

FoamDDI accurately controls the air flow, temperature and sequence, which is then augmented using a unique VISION algorithm to accurately determine the height of static and dynamic foam heights, while greatly improving the precision and accuracy of ASTM D892.

Ask for a Demo Today:
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