

Fast and Accurate Online MicroDistillation Technology

MICRODIST



- Increase Profitability by Maximizing Production and by Preventing Product Giveaway
 - Robust Process Control through Real Distillation
 - Analysis with a Cycle Time under 10 Minutes Reducing Maintenance and
- Utility Costs Ensure Compliance with a Precision Equivalent or Better than ASTM D86

INTRODUCTION

The MicroDist™ analyzer measures the distillation characteristics of hydrocarbon products in correlation with ASTM D86 and IP-123. The MicroDist™ utilizes the technology of a fast, accurate established distillation method used in laboratory analysis. The MicroDist™ measures the vapor, liquid temperatures and percentage distilled over the boiling point curve in under 10 minutes. The cell can be flushed automatically with the sample to be tested and a special thermo-destruction cleaning cycle can be programmed to be done at scheduled intervals.

EXCELLENT ANALYSIS PERFORMANCE

The MicroDist™ is used for process optimization and product certification and control of blending processes for various refining streams including motor gasolines, fuel oils, naphtha and diesel. Accurate reporting of distillation points reduces product variability and waste. The system shows excellent analysis performance (high accuracy, enhanced speed and flexibility).

DIRECT CORRELATION WITH ASTM D 86

True physical distillation where correlation model to reference method is not dependent on product composition change. It is important to have an easy and accurate correlation with the D 86 method so the results of the online analyzer are validated and may be used for process control which requires a quick turn around for results.

The ISL MicroDist™ Analyzer has a direct correlation with standard D86 (lab quality control) with equivalent (or better) precision and excellent repeatability (+/- 1.5°C).

RESULTS IN LESS THEN 10 MINUTES

The MicroDist™ analyzer can provide a complete distillation run and test report in less than 10 minutes using only 10 ml of sample. The results occur in a third of the time of other physical distillation methods.

CERTIFIED EXPLOSION PROTECTED CONSTRUCTION

Meets ATEX - Ex II 2 G Ex px IIC T4 to satisfy safety requirements.

The big heavy explosion-proof housing has been replaced by an integral purge system with divided analytical and electronic sections.

EASE OF USE

- Software automates all aspects of calibration, validation, sample analysis and data reporting allowing unattended operation
- Built-in Auto-diagnostics to prevent faulty runs. Analyzer will not initiate run mode unless all built-in checks pass
- No calibration required at set-up. Readily available CRMs can be used to validate the calibration on a yearly basis
- Unique flask assembly design requires no cleaning
- No configuration change required when changing fuel streams
- No dependency on product composition change (no matrix effect)
- The MicroDist can give boiling point data for many types of fuels
- Built-in Nitrogen generator is available and instrument air is the only utility gas required
- Graphing capability –user selectable boiling points can be displayed on front screen
- Analyzer is calibrated and tested to the customer's specifications
- Data transfer through 4 different communication interfaces (4-20mA; Digital Report; Modbus; Ethernet)



Autodiagnostic Screen



Gasoline Results Table



Diesel Results Table



Programmable Trending

LOWER COST OF OWNERSHIP

- Faster test results in half the time of other methods with no correlation needed.
- Low consumable usage with new Permaflask technology.
- Reduced gas usage and local calibration once per year.
- Direct injection calibration port saves time and effort between tests.
- Multi-stream capability (up to 2 additional sample inputs) . Unique cell regeneration cycle (with automatic coke detection) for a minimal level of maintenance
- No utilities gases required (only air instrument, if Ni genera tor is installed)



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SPECIFICATIONS

Operation	
Measurement Cycle Time	Less than 10 minutes
Measurement/Temperature Range	Full boiling point curve 20-400 °C (68-752°F)
Repeatability	Equal or better than ASTM D86
Accuracy	Better than D86, IP-123, ISO 3405
Sample Requirements	
Sample return pressure	Atmospheric to < 8 bar or 120 psig (1.4 bar or 20 psig less than supply)
Sample flow rate	10-20 L/ hour (application dependent)
Sample temperature	Min. 15°C below IBP without cooler Max. 30 °C above IBP, application dependent with cooler
Sample pressure	2 - 10 bars (30-145 psi)
Enclosure/ Installation and Requirements/Utilities	
Dimensions	L: 802 mm X H: 660 mm X W: 320 mm (31.5 in. X 26 X 12.6)
Weight	75 kg (165 lb.)
Operating Temperature	10°C to 40°C, non-condensing
Area Classification	NEC Class 1 Division 2 Groups B, C & D, UL/CSA or ATEX - Ex II 2 G Ex px IIC T4
Power	115 VAC/6A max, 50/60Hz, 700W 230 VAC/3A max, 50/60Hz, 700W
Cabinet Purge Gas	Air, > 150 l/min (5.3 SCFM), minimum 5 bars 72psi)
Inert Gas	Nitrogen, inlet pressure 6-10 bars
Installation Site	Avoid direct sun light and provide rain-proof shelter for outdoor installation
End User Connections	
Analog Output Signal	Isolated (4) 4-20mA outputs for selected distillation cut point values
Digital Input/Outputs	8 digital inputs, 8 digital outputs, user assignable
Serial Input/Output Signal	Single RS232 or RS485 bi-directional, Modbus for full curve
Options available	
Nitrogen generator	Required if no Nitrogen supply
Multi-stream	Up to 3 streams available
Sample cooling	For low IBP (gasoline applications)
Stand option	Stand with Wheels or Wall Stand Available
Additional 4-20 mA output board	Adds 4 additional 4-20 mA analog outputs, user assignable
Optional flame arresters	For atmospheric and vapor vents

Continuing research and development may result in specifications or appearance changes at any time

ISL by PAC

ISL is a global provider of scientific apparatus and instruments for testing petroleum and petrochemical products in the lab and online. More than 20 automatic analyzers bearing the ISL brand are recognized for increasing test precision, boosting laboratory efficiency and reducing costs.

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