Innovations in Phase Analysis Solutions

Superior precision & speed

ASTM quality results

Self-contained

Compact

SERIES 70X

Online Analyzers
for Freeze, Cloud and Pour Point Tests

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PHASE TECHNOLOGY

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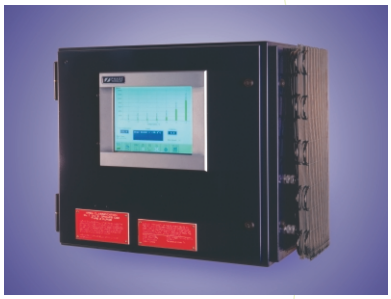
Phase Technology is proud to present a new generation of petroleum analyzers that incorporates all of your bottom-line, analytical and operating requirements in the basic design. In a demanding fuel and lubricant marketplace, our analyzers will sharpen your competitive edge by minimizing production costs and enhancing quality, productivity and yields.

Innovative Integration

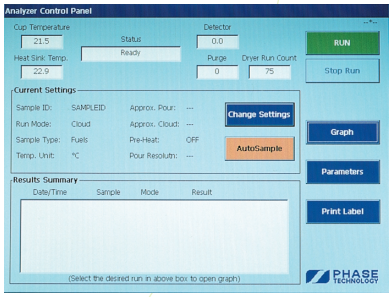
Taking advanced science and engineering to the next level, Phase Technology continues to lead in the field of low-temperature hydrocarbon phase behavior analysis. Surpassing all other online analyzers, the new 70X series integrates the power of advanced multi-processor systems, speed and size of an internal miniature cooler, sensitivity of micro-detectors and user-friendliness of a full-color touchscreen interface into one compact instrument. The result is a powerful and efficient instrument that accurately reports ASTM test values and describes the low-temperature flow behavior of petroleum-based products. In addition, the new generation system is uniquely self-contained in that the only utility needed is electricity, thus no longer requiring an external chiller. With an impeccable track record of quality, precision and reliability, Phase Technology's new 70X series analyzers will significantly increase your profitability.

Outstanding Features



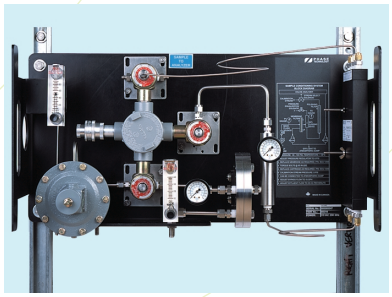
ANALYZER CHARACTERISTICS

Compact design
Fast and precise analysis
Virtually maintenance-free
Fully automated operation
Self-contained system: no external coolant or PC connection required



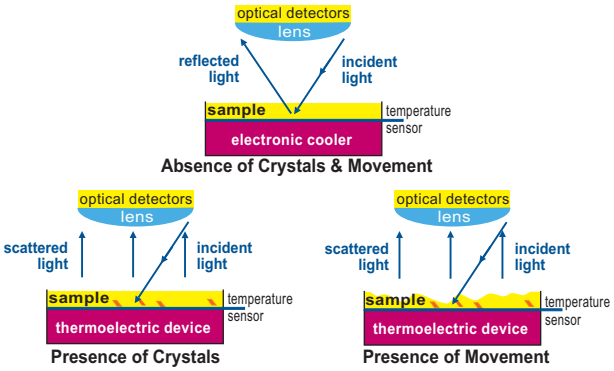
DISPLAY MONITOR & SOFTWARE

Touch input panel
Memory storage for over 10,000 tests
Full-colour 10.4 high-resolution display panel
Digital and graphical representation of test results



SAMPLE CONDITIONING UNIT

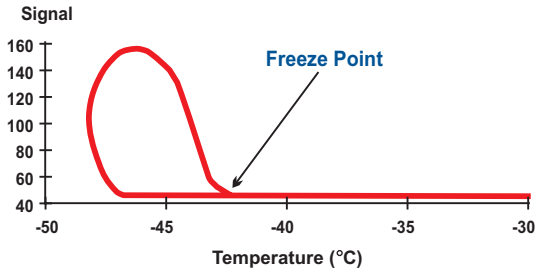
Extremely low maintenance
Effective removal of particles
Efficient elimination of free water
Intelligent self-cleaning mechanism



Proven Technology

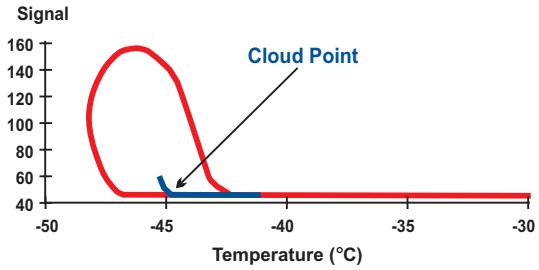
Engineered with the Diffusive Light Scattering (DLS) technology that has received over 25 patents, Phase Technology's analyzers detect phase changes with extreme sensitivity and accuracy. DLS has been standardized by many industries for the rheology and crystallization characterization of petroleum products. The technology's patented gas pulsing approach stimulates movement and allows for ultra-fine temperature resolution in pour point testing. Equipped with such advanced technique, and driven by a philosophy that accentuates Quality and Total Customer Satisfaction, each analyzer is stress-tested for reliability assurance and custom-configured to allow for a wide selection of external interfaces and test functions of various combinations. You are guaranteed an instrument that satisfies your exact analytical specifications and a quality of service that surpasses all others.

ASTM Applications



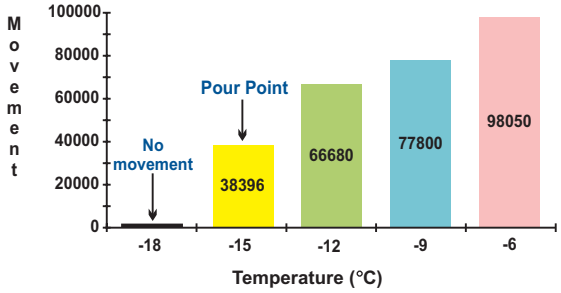
FREEZE POINT

Freeze point is a crucial specification for aviation turbine fuels. ASTM D-5972 is the test method developed based on the Phase Technology freeze point analyzer. This procedure is included in the Standard Specification for Aviation Turbine Fuels (ASTM D-1655) and is the approved method not only for the aviation industry, but also military and petroleum refineries worldwide. Designed with superior technology, the analyzers are proven suitable for a wide range of jet fuels, particularly hydrocracked fuels that are often difficult to test using other methods. In addition, Phase Technology analyzers exhibit high levels of sensitivity for diesel contamination detection in jet fuel, as well as unprecedented precision.



CLOUD POINT

Cloud point is an important product specification for diesel and other distillate fuels. ASTM D-5773 is the test method developed based on the Phase Technology cloud point analyzer. The method is included in the Standard Specification, ASTM D-975, for Diesel Fuel Oils and numerous other petroleum distillates. Equipped with this technique, Phase Technology analyzers are the most widely used instrument for cloud point analysis. A small aliquot size and advanced cooling system allow the analyzer to scan for approximate wax appearance temperature followed by a slow and constant cooling rate to verify the ASTM cloud point. With a total analysis time of 3 to 5 minutes, Phase Technology cloud point method is stated in ASTM research reports to bear the best precision over all other available methods.



POUR POINT

Pour point is the lowest temperature at which a sample still shows movement under conditions of the test. It is a critical lube oil specification, and is often specified in diesel transactions as well. ASTM D-5949 is the test method developed based on the Phase Technology pour point analyzer. The procedure involves applying a calculated gas pulse onto the sample surface at 3°C intervals (or any other user programmable interval) until no movement is detected. With its advanced optical system, Phase Technology pour point analyzers are ideal for detection of a wide range of materials. ASTM research reports show that Phase Technology's pour point method is superior over the ASTM D-97 alternative in terms of both repeatability and reproducibility.

Complete System

Each of Phase Technology's analyzer systems comes complete with all of the equipment necessary to measure freeze, cloud and pour point. The online analyzers are complete turnkey systems, requiring neither an external chiller nor water supply. All you need to provide are electricity, purge air and signal cables. Each online system consists of a process analyzer, and the Aquanot -- an ingenious self-cleaning Sample Conditioning Unit. By integrating this compact and virtually maintenance-free conditioning unit into the online analyzers, Phase Technology removes the task of finding a reliable way to deliver a clean, dry sample. A Sample Recovery Unit and Multiple Stream Selection Unit are also available, if required.

Specifications

MEASUREMENTS

Test Method	Pour Point:	ASTM D-5949
	Cloud Point:	ASTM D-5773
	Freeze Point:	ASTM D-5972
	Antifreeze FP:	ASTM D-6660
Precision	Within the precision of the above stated ASTM methods	
Bias	0 (relative to ASTM manual method)	
Sample Temp.	Maximum:	+65°C(+149°F)
	Minimum:	- 75°C(-103°F)

OPERATIONAL

Sample Size:	0.15 ml
Test Duration:	3 -10 minutes per test
Cycle Time:	User programmable
Hazard Rating:	Class 1, Division 1 and 2, Groups C & D*

* Other ratings and Cenelec models are also available

UTILITIES

Electrical:

90 - 264 VAC, 47 - 63 Hz
430 watts (online analyzers)

Purge Air:

Flow:	12 scfh
Inlet Pressure:	60 - 120 psig

OUTPUTS

Analyzer display:
- test results
- status and alarms
- phase behavior of sample under test
- history of last 10,000 runs

Remote diagnostic via modem:
- all operating parameters
- all information on analyzer display

- 4-20 mA current loops for test results
- contact switches for alarms
- MODBUS option

PHYSICAL

Weight:	93 lbs (42 kg)	
Dimensions: (W x D x H)	26 x 13 x 20	inches
	66 x 33 x 51	cm

Sample Conditioning Unit

Weight:	31 lbs (15 kg)	
Dimensions: (W x D x H)	24 x 6 x 12	inches
	61 x 15 x 31	cm

SAMPLE STREAM

Fuels inlet stream requirements

Flow:	Min. 15 gph (57 liters/hour)
Pressure:	20 - 150 psig
Temperature:	Minimum of 3°C (5°F) above cloud point Maximum of 50°C (120° F)
Vol./analysis:	0.5 gallon (2 liters)

Lubes inlet stream requirements

Flow:	Min. 0.8 gph (50 cc/minute)
Pressure:	60 - 150 psig
Temperature:	Minimum 30°C (86°F) Maximum 70°C (158°F)
Vol./analysis:	0.5 gallon (2 liters)

Continuing research and development may result in specification changes at any time

STANDARD MODELS

FUNCTION	
Cloud Point	CPA-70XPP2
Freeze & Cloud	FCA-70XPP2
Freeze Point	FPA-70XPP2
Pour & Cloud	PCA-70XPP2
Pour & Freeze	PFA-70XPP2
Pour Point	PPA-70XPP2
Pour, Cloud & Freeze Point	PSA-70XPP2

Other functions and models are available upon request

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