70X Series Laboratory Analyzers

for Cold Flow Properties

from Phase Technology

Scientifically Designed for Workflow Optimization

- Best measured precision (repeatability and reproducibility) of any automatic or manual method

- Fastest speed of any automatic or manual method: test results in just 8-20 minutes

- Full-color, touch-sensitive, 10.4" high resolution LCD touch screen

- Quick set up time, intuitive and easy to understand on-screen prompts

- Capable of any user programmable resolution to 0.1°C

- Unsurpassed detection of contamination in jet fuels

- Rapid cooling and quick heating of samples

- Compact design – easy to move around your lab or fit into areas with little space

- **NEW!** **Ethernet-Ready**
  Ethernet port available for connecting to LIMS or internal computer networks

- **NEW!** **USB Drive Connectivity**
  Provides quick export of analyzer data to a portable flash drive and use of USB peripherals.

- **NEW!** **Buzzer Alarm Alert**
  Can be set to beep to indicate warnings, alarms and prompts

- **NEW!** **Large Format Results**
  Optional pop-up window displays test results in larger, easy-to-read font

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Pour Point - Cloud Point - Freeze Point

Precision. Reliability. Trust.

Phase Technology's 70X significantly increases lab productivity and improves profitability by providing quick, precise results.

ASTM Methods

Phase Technology users can be confident that their test results accurately meet and comply with ASTM International standards for pour, cloud and freeze point: ASTM D5949, D5773 and D5972.

Innovative Design – Intuitive Interface

Phase Technology leads the industry with the world's first and only automatic pour, cloud and freeze point analyzer – all in a single unit.

User-friendly features include a full-color LCD touch screen for easy, quick entry of all test functions. The screen also displays valuable test result data, graphics and phase plots.
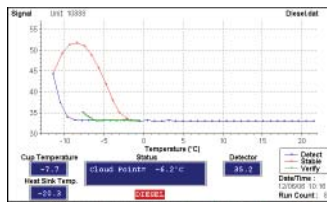
NEW! FAVORITES Feature

Frequently-used test settings can now be stored in the analyzer for quick access.

With the single push of a button, lab operators can efficiently perform tests in significantly less time.

No longer do you need to repeatedly program multiple settings for each test run.

Favorites can be created, organized, sorted or deleted as you desire.

Preset the run mode, sample type, temperature mode, and estimated result for workflow optimization.

70X screen displays real-time test results and phase plot, showing temperature change and signal strength as test progresses. The graphic visual information helps users better understand anomalous behavior.

> **It's important for us to maintain consistent quality at every point of the refining process. That's why we use Phase Technology analyzers throughout our company in various locations. Our business depends upon the accuracy of the results. For reliability, Phase Technology is our instrument of choice.**
> *Louis A. Delgado,* Lab Manager, Valero Energy Corporation

PHASE TECHNOLOGY

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70X Series Laboratory Analyzers

TEST METHODS	Pour Point	ASTM D5949 ASTM D97 (IP 15 / ISO 3016) equivalent or better	
	Cloud Point	ASTM D5773 (IP 446) ASTM D2500 (IP 219 / ISO 3015) equivalent	
	Freeze Point	ASTM D5972 (IP 435) ASTM D2386 (IP 16 / ISO 3013) equivalent	

STATED PRECISION: REPEATABILITY & REPRODUCIBILITY		Repeatability	Reproducibility
	Pour Point	1.6 °C	3.2 °C
	Cloud Point	1.3 °C	2.5 °C
	Freeze Point	0.5 °C	0.8 °C

BIAS	0 (relative to ASTM manual methods)
CONTAMINATION DETECTION	99% (highest measured value in ASTM study)
SAMPLE TEMPERATURE RANGE	-75 °C to 50 °C
TEST RESOLUTION	0.1 °C

TEST DURATION	Pour Point	8 to 20 minutes
	Cloud Point	5 to 8 minutes
	Freeze Point	8 to 10 minutes

REQUIRED OPERATOR TIME	0.5 minutes
SAMPLE SIZE	0.15 mL
DETECTION METHOD	Patented Diffusive Light Scattering (DLS) technology
COOLING SYSTEM	Integrated Peltier device cooling system
DISPLAY	Full-color, touch-sensitive, 10.4" high resolution LCD touch screen
OUTPUTS	(3) USB ports for optional peripherals: flash drive, label printer, barcode scanner, keyboard, mouse; (3) RS-232 serial ports for optional peripherals & networking: external computer, Phase Technology LTB diagnostic software; (1) 10/100Base-T Ethernet (RJ45) port for networking: LIMS, local area network (LAN)
TEMPERATURE MEASUREMENT	°C or °F (User selectable)
ALERTS	Buzzer for alarms warnings and prompts (User selectable)
INTERNAL MEMORY	Storage up to 5000 test runs (minimum)
AMBIENT OPERATING ROOM TEMPERATURE	10 to 30 °C (50 to 86 °F) Extremes not recommended

DIMENSIONS (W x D x H)	Unit	10 x 21 x 12 inches 27 x 54 x 31 cm
	Boxed	29 x 18 x 16 inches 74 x 46 x 41 cm

WEIGHT	Unit	46 lbs (21 kg)
	Boxed	55 lbs (25 kg)

Applications

Phase Technology 70X analyzers test a wide range of petroleum, biofuel and other products including:

- Diesel fuel
- Jet fuel
- Finished lubricants
- Base oil
- Bright stock
- Distillate fuel
- Gas oil
- Biofuels & biodiesels
- Black oil
- Crude oil
- Engine coolant (antifreeze)
- PAO & synthetic lubricants
- Engine & gear oils
- Automatic transmission fluids
- Food oils & fats
- Surfactants & gels

Options

Phase Technology 70X series analyzers give you complete flexibility – choose the test options you need for a customized solution. Available configurations include:

PSA-70X	Pour, Cloud & Freeze Point
PPA-70X	Pour Point
CPA-70X	Cloud Point
FPA-70X	Freeze Point
PCA-70X	Pour & Cloud Point
PFA-70X	Pour & Freeze Point
FCA-70X	Freeze & Cloud Point
GPA-70X	Single function specialty analyzer for gel, titer, antifreeze, or solid point

Additional options such as antifreeze, black and crude oils are available.

> **Our Phase Technology analyzer is a real time-saver. The combination of automation and the easy-to-understand color touch-screen adds to our lab's overall efficiency.** *Thomas C. Bell*, Specialist – Manufacturing and Lab Support, Americas Technical Support, Global Lubricants, Chevron