



70Xi Series Autosampler Analyzer Systems

for Cold Flow Properties

from Phase Technology

Scientifically Designed for Workflow Optimization

- Batch processing – load and go!
- Unlimited flexibility – change sample order without stopping current test run. Perfect for shifting, “need-this-now” priorities.
- 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
- Improved thermal management and more powerful cooling system; minimum sample temperature now below -88°C [-126°F]
- Less operator involvement – greatly reduced chance of user-introduced error
- Import and store any user documents (.doc, .pdf, .ppt and .pps) for customized operating procedures (SOP) or training
- Connect any HP (or PCL compatible) printer via USB
- Configurable desiccant replacement count
- Customizable reporting – test history, plot data and self-diagnostics can be displayed on-screen, printed, or transferred to computer for statistical analysis, presentations, email sharing, archival storage
- **FOR LUBE OILS: Sample Heater Block with Integrated Wash Station** Sample vial heater block to specially pre-heat viscous samples; automatic cleaning with heptane solvent

Pour Point - Cloud Point - Freeze Point

Increase Lab Efficiency & Productivity

High performance sample handling, precise sample injection, and built-in automatic cleaning — the 70Xi Autosampler Analyzer System gives you a full range of robust, productivity-boosting features that eliminate human error and decrease lab analysis time.

ASTM Methods

All 70Xi Series Autosampler Analyzer Systems meet and comply with ASTM International methods for pour, cloud and freeze point: ASTM D5949, D5773 and D5972.

Solutions that Optimize Your Lab's Workflow

Set-and-forget convenience: unattended testing lets you initiate 1 to 48 runs in a row, then walk away and let the analyzer do the rest!

Automatic sample injection: no need to individually pipette samples or change tips. Always uses the precise

amount of sample as required by the ASTM method.

Self-cleaning: saves time and headaches caused by manual cleaning. No more risk of damage to sample cup.

One-touch preset Favorites: Frequently-used

test settings can be stored in the analyzer for quick access. Press just one button to perform a test!

Full-color, touch-sensitive, 15" high resolution screen: Easier to read and view. Multitasking capability eliminates need to flip between multiple windows. Overlay and compare multiple phase plots in different colors

Easy-to-use interface: New colorful graphic icon buttons for quicker navigation. Greater use of touch screen gestures.

USB and Ethernet connectivity: Quickly export analyzer data to a portable USB flash drive. Ethernet port available for connecting to LIMS or internal computer network.



70Xi screen displays fully programmable 48-position vial selection and positioning. Samples are identified by ID number and color-coded by type. User selects sequence on-screen; no need to physically touch samples.

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*

70Xi Series Autosampler 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 | -88 °C to 70 °C | | |
| TEST RESOLUTION | 0.1 °C | | |
| TEST DURATION | Pour Point | 8 to 30 minutes | |
| | Cloud Point | 5 to 10 minutes | |
| | Freeze Point | 8 to 10 minutes | |
| SAMPLE SIZE | High-precision metering pump ensures exactly 0.15 mL (ASTM method) | | |
| DETECTION METHOD | Patented Diffusive Light Scattering (DLS) technology | | |
| COOLING SYSTEM | Integrated Peltier device cooling system | | |
| SAMPLE PRE-HEATING | sample vial heater block (APA-70Xi & APC-70Xi only) | | |
| DISPLAY | Full-color, touch-sensitive, 15" high resolution LCD touch screen | | |
| OUTPUTS | (3) USB A ports for optional peripherals: flash drive, label printer, barcode scanner, keyboard, mouse; (1) USB B port (3) RS-232 serial ports for optional peripherals & networking: external computer, Phase Technology LTB diagnostic software; (1) dedicated Service port; (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 | | |
| AMBIENT OPERATING ROOM TEMPERATURE | 10 to 30 °C (50 to 86 °F) Extremes not recommended | | |
| DIMENSIONS (W x D x H) | Analyzer Unit | Length x Width x Height 21.5 x 13.25 x 17.5 inches 54.6 x 33.7 x 44.5 cm | |
| | Autosampler | 10.4 x 16.4 x 17 inches 26.5 x 41.5 x 43.5 cm | |
| WEIGHT | Analyzer Unit | 53 lbs / 24 kg | |
| | Autosampler | 22 lbs / 10 kg | |
| UTILITY REQUIREMENTS | Electrical | 90 – 260 VAC, 47 – 63 Hz 350 watts | |
| | External Cooler Bath | NONE | |

Applications

Phase Technology 70Xi Autosampler Analyzer Systems test a wide range of petroleum and biofuels including:

- Diesel fuel
- Jet fuel
- Finished lubricants
- Base oil
- Bright stock
- Distillate fuel
- Gas oil
- Biofuels & biodiesels
- PAO & synthetic lubes
- Engine & gear oils
- Automatic transmission fluids

Options

Phase Technology 70Xi Series Autosampler Analyzer Systems give you complete flexibility – choose the test options you need for a customized solution. Available configurations include:

- APA-70Xi Lube Oil Pour Point
- APC-70Xi Lube Oil Pour & Cloud Point
- PSA-70XiAS Fuels Only Pour, Cloud & Freeze Point
- PCA-70XiAS Fuels Only Pour & Cloud Point
- PFA-70XiAS Fuels Only Freeze & Pour Point
- FCA-70XiAS Fuels Only Freeze & Cloud Point
- CPA-70XiAS Fuels Only Cloud Point
- FPA-70XiAS Fuels Only Freeze Point

Additional options may be available on request.

The Phase Technology 70Xi is also available as a stand-alone analyzer without autosampler.

We call our Phase Technology analyzers “The Dynamic Duo.” We have both a PPA-70X and an APA-70X. Our lab tests a wide range of lube samples; some are much more viscous than the others. We use the APA to test our heaviest samples because of the auto clean capability. The APA eliminates any potential bias or error due to improper cell cleaning. We use the PPA for our more regular samples to enable even faster analysis. Either way, we get exceptionally quick pour point analyses comparable to both rotational or tilt methods, but in much less time. *Paul Grives, SE/SW Quality Implementation Manager, ExxonMobil*