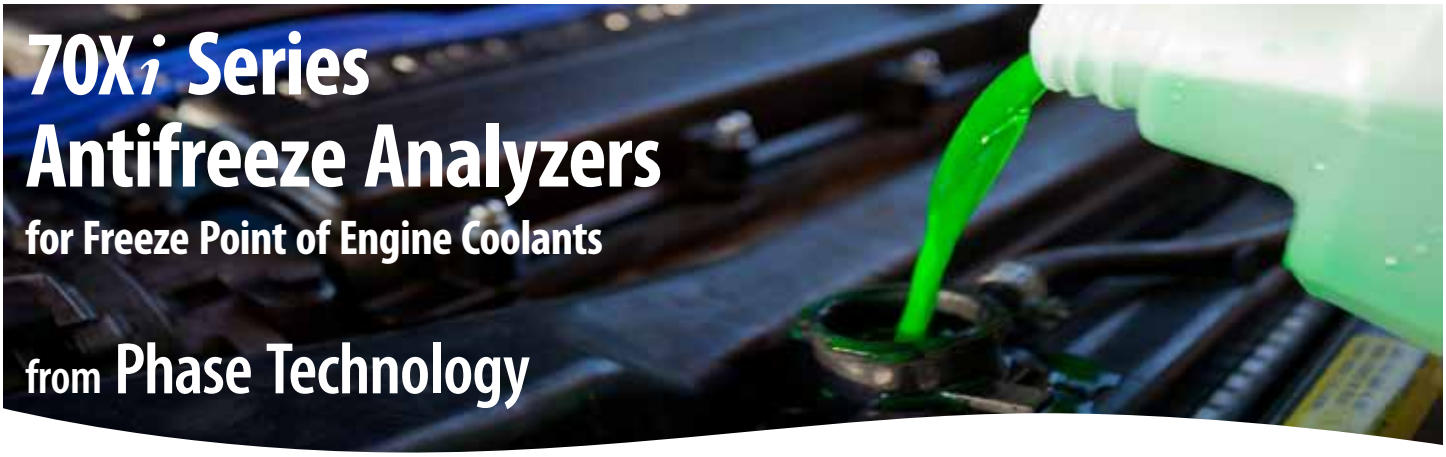


70Xi Series Antifreeze Analyzers

for Freeze Point of Engine Coolants

from Phase Technology

Scientifically Designed for Workflow Optimization

- Best measured precision of any method to determine freezing point of an engine coolant with reproducibility that exceeds the manual method
- Fastest speed of any automatic or manual method: test results in less than 10 minutes
- Improved thermal management and more powerful cooling system; minimum sample temperature now below -88°C [-126°F]
- 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
- Programmable user access levels streamlines workflow and prevents accidental changes
- Import and store any user documents (.doc, .pdf, .ppt and .pps) for customized operating procedures (SOP) or training
- Sample chamber now located lower and at front for easier, faster loading and cleaning and less risk of spilled sample
- Alert sounds when test is finished and ready for next run; audible keyboard "clicks"
- Connect any HP (or PCL compatible) printer
- New front panel power button and software-enabled shutdown

Freeze Point of Engine Coolants

The World's Only Automatic ASTM Method

Phase Technology leads the industry with the world's first and only automatic freeze point analyzer for engine coolants.

ASTM Methods

Phase Technology users can be confident that their test results are accurately measured by ASTM D6660, the only automatic method that is approved by ASTM International standards for antrifreeze: ASTM D3306 and D4985.

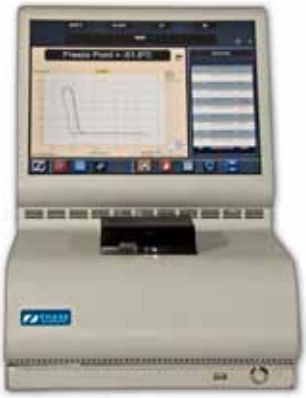
Innovative Design – Intuitive Interface

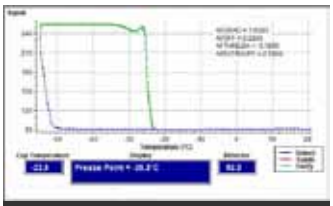
Phase Technology's 70Xi significantly increases lab productivity and improves profitability by providing quick, precise results.

User-Friendly Productivity Features

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





70Xi 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.

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.

Optimized for quality control: Automatic QC runs with instantaneous control charts. Retest sample option increases confidence in test result.

This instrument has been a blessing, cutting our reporting time in half. We were using the manual method, so it's great that we no longer have to deal with dry ice and manual mixing. *Humberto Hill*, Lab Manager, Camin Cargo Control Lab

PHASE TECHNOLOGY

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Technical Specifications

70X*i* Series Antifreeze Analyzers

TEST METHOD	ASTM D6660 ASTM D1177 equivalent	
STATED PRECISION: REPEATABILITY & REPRODUCIBILITY	Repeatability	Reproducibility
	0.6 °C	0.8 °C
BIAS	.67 °C relative to ASTM manual method (not statistically significant at 95 % confidence level)	
SAMPLE TEMPERATURE RANGE	-88 °C to 70 °C	
TEST RESOLUTION	0.1 °C	
TEST DURATION	< 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, 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)	Unit	Length x Width x Height 21.5 x 13.25 x 17.5 inches 54.6 x 33.7 x 44.5 cm
	Boxed	29 x 23 x 19 inches 74 x 58 x 48 cm
WEIGHT	Unit	53 lbs / 24 kg
	Boxed	62 lbs / 28 kg
UTILITY REQUIREMENTS	Electrical	90 – 260 VAC, 47 – 63 Hz 350 watts
	External Cooler Bath	NONE

About Phase Technology Antifreeze Analyzers

Scientists at Phase Technology have dedicated many years of research in the low temperature phase transition behavior of materials. Their expertise, in combination with the latest advances in electronic and cooler designs, has led to patented technologies that measure the freeze point of engine coolant precisely.

These unique proprietary technologies offer distinct advantages over other methods in terms of precision, speed, reliability, compactness and ultra-low sample temperatures. The net result is the GPA-70XiAF, a compact instrument that accurately reports the freeze point of engine coolants. The methodology was adopted by ASTM D6660 and specified in coolant specifications for light and heavy-duty vehicles such as ASTM D3306, D4985, GM6277M and Ford WSE-M97B44-B.

Coolant manufacturers, packagers, research and inspection laboratories, government agencies and many other facilities derive significant benefits from using Phase Technology's freeze point analyzers. In comparison with the manual D1177 method, the analysis time is reduced to less than 10 minutes while precision is significantly improved.

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, Chevron