

DFA-70Xi Diesel Fuel Analyzer

cloud point, pour point, viscosity & density of diesel fuels

from Phase Technology



Scientifically Designed for Workflow Optimization

- **SUPER FAST SPEED**
Four different tests in less than 25 minutes.
- **AUTOMATIC SAMPLE INPUT**
No pipette required. New vial injection system loads sample automatically.
- **SELF CLEANING — NO SOLVENT REQUIRED**
No messy clean up. Automatic flush cycle rinses and disposes of remaining sample.
- **NO LIQUID BATH**
Quiet, cool, self-contained thermoelectric cooler; no hazardous liquid bath medium
- **NO BREAKABLE GLASSWARE**
Internal capillary system eliminates need for fragile glass viscosity tubes
- **SUPERIOR PRECISION**
Best measured repeatability and reproducibility of any automatic or manual method
- **ONE-TOUCH PRESET FAVORITES**
Frequently-used test settings can be stored in the analyzer for quick access.
- **OPTIMIZED FOR QUALITY CONTROL**
Automatic QC runs with built-in control charts.

Cloud Point - Pour Point - Diesel Viscosity - Diesel Density

Versatility & Convenience Combined

Phase Technology's new DFA-70Xi analyzer is the world's first and only instrument that performs four important diesel fuel tests in one single unit—cloud point, pour point, viscosity and density. And, it does it all in less than 25 minutes!

Automatic Sample Injection System

The DFA-70Xi features a new, side loaded automatic sample injection port. There's no longer a need to manually pipette. The analyzer always draws the precise amount of sample as required by the ASTM method.

The DFA is completely self-cleaning; no need of solvents. Save time and hassle of cleaning, and avoid any risk of damage to the sample cup or breakage of glassware.

Unsurpassed ASTM Precision

The DFA-70Xi's ASTM D7945 viscosity method exceeds D445 with repeatability of 0.50%. And unlike other viscometers, with the DFA-70Xi there's no liquid bath needed.

Cloud point is tested according to ASTM D5773, the longest, continuously active automatic method. The DFA's ASTM D5949 pour point method has similarly been active longer than any other automatic methods.

Density is measured by ASTM D4052.



Trusted 70Xi Analyzer Design

The new DFA analyzer is built on the 70Xi series platform, so all the same time-saving, productivity-boosting features are included.

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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DFA-70Xi Diesel Fuel Analyzer

TEST METHODS	Cloud Point	ASTM D5773 (IP 446) ASTM D2500 (IP 219/ISO 3015) equivalent or better	
	Pour Point	ASTM D5949 ASTM D97 (IP 15/ISO 3016) equivalent or better	
	Kinematic Viscosity	ASTM D7945 @ 40 °C ASTM D445 (IP 71/ISO 3104) equivalent or better	
	Density	ASTM D4052 (IP 365/ISO 12185) @ 15 °C	
STATED PRECISION: REPEATABILITY & REPRODUCIBILITY		Repeatability	Reproducibility
	Cloud Point	1.3 °C	2.5 °C
	Pour Point	1.6 °C	3.2 °C
	Kinematic Viscosity	0.50%	0.80%
	Density	0.0001 g/mL	0.0005 g/mL
BIAS	0 (relative to ASTM manual methods)		
SAMPLE TEMPERATURE RANGE	-80 °C to 70 °C		
SYSTEM CLEANING	Automatic flush cycle; no solvent required		
TEST DURATION	Cloud point & density combined	5 to 10 minutes	
	Viscosity & density combined	10 minutes	
	Cloud, pour, viscosity & density combined	25 minutes	
REQUIRED OPERATOR TIME	0.25 minutes		
SAMPLE SIZE	0.15 mL required for test minimum 20 mL including cleaning		
DETECTION METHOD	Patented Diffusive Light Scattering (DLS) technology for cloud and pour point; horizontal capillary with motive force for KV		
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	

Applications

Diesel and biodiesel fuel's cold-weather operability and fuel handling characteristics are measured by testing cloud point and pour point.

Viscosity is an important parameter to ensure there is proper lubrication, with no damage in the engine's fuel pump. Viscosity also influences the spray pattern when the fuel is injected into the cylinder.

Density affects the heating value (or energy content) of the fuel.

Options

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

DFA-70Xi-FP Cloud and pour point, viscosity, density for diesel fuels; freeze point for jet fuels

DFA-70Xi-AS Cloud and pour point, viscosity, density for diesel fuels; with 48-position autosampler

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