

Automated Freezing Point of Aqueous Engine Coolants

test method

This test method involves the determination of the time-temperature curve prior to freezing and the determination of the horizontal or flattened portion of the freezing curve. The freezing point is taken as the intersection of projections of the cooling curve and the freezing curve. If the solution supercools, the freezing point is the maximum temperature reached after supercooling.

automatic freezing point analyzer with integrated panel PC

- Conforms to ASTM D1177 and related specifications
- Standalone system with Integrated Touch Screen Panel PC
- Direct Cooling system eliminates the need for solvent cooling baths
- Cooling system provides temperatures as low as -100°C
- Freezing Point measured by light pulsed emission on I.R spectrum through a coaxial fiber optic with mirror

The freezing point detection system provides automated sample testing with the accuracy and repeatability in accordance with ASTM D1177 and related international specification. The sample is cooled in the test chamber with constant stirring. The sophisticated dynamic measurement system emits a light pulse every 0.5°C from a coaxial fiber optic cable positioned above the test sample. The light pulse is then reflected off the mirror of the fiber optic to an optical sensor. The advanced software package analyzes the response of the light pulse. The initial appearance of crystallization is monitored by light scattering. The sample is then warmed up, and the temperature at which the hydrocarbon crystals disappear is recorded as the freezing point. All clear and transparent fuels are readily measured by the detection system, regardless of sample color.

Integrated Panel PC and Software Package – The KLA Series of analyzers are complete standalone systems featuring an integrated panel PC with an advanced software package. The 8" TFT/LCD touch screen display has a resolution of 1024x768 with a 16.2 M color scheme. All analytical parameters are graphed and displayed in real time as well as recorded in Microsoft® Excel compatible file format. The software monitors the operation and performance of all the analyzer components for proper data measurement, including the solenoid valves, cooling system, pressure sensors, and the Platinum resistance PT100 Class A temperature probe.

Cooling System – The direct cooling system features integrated gas CFC free motors compressors thus eliminating the need for a solvent cooling bath. The direct system is capable of rapid cooling, approaching -100°C bath temperatures in approximately 15 minutes, and utilizes less electricity than standard cooling systems. The rapid cooling feature combined with a consistent cooling profile system provides repeatable results with high test reproducibility.

Safety Features

- Audible alarm and displayed messages (at the end of the analysis and in case of errors and/or malfunctions)
- Pressure controller for 1st and 2nd stage motor compressor
- Thermostat for 2nd stage activation
- Thermo-switch for each cooling / heating jacket
- Motor compressors equipped with internal overload devices

Multiple Configuration System – These automated sample cooling and physical property measurement systems can be configured with one, two, three, four and six test positions with one of five possible analytical heads at each position: cloud point, pour point, cloud & pour point, cold filter plugging point and freezing point. Standard and customized multiple configuration systems are readily available.



KLA-8-CTS Automatic Freezing Point Analyzer with integrated touch screen

specifications

Conforms to the specifications of ASTM D1177

Temperature Range: +55 to -100°C

Resolution: 0.06°C

Accuracy: ±0.1°C

Repeatability / Reproducibility: as per standard test methods or better

Data Storage: > 60,000 analyses

Electrical Requirements

115V ± 15% / 60Hz

220V ± 15% / 50 to 60Hz

Dimensions WxDxH,in.(cm)

26 x 23.75x 31.5 (66x60x80)

Net Weight: 176.5 lbs (80kg)

ordering information

catalog no.

KLA-8-CTS

description

Automatic Freezing Point Analyzer for Aqueous Engine Coolants (D1177) with Touch Screen, 115V 60Hz

KLA-8-CTS (220)

Automatic Freezing Point Analyzer for Aqueous Engine Coolants (D1177) with Touch Screen, 220-240V 50/60Hz

accessories

KLA-8S-381

Double Tube

KLA-8S-382

Wire Stirrer



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