

AUTOMATED CLOUD POINT AND POUR POINT OF PETROLEUM PRODUCTS

Test Method

For Petroleum Products, cloud point and pour point of a petroleum product is an index of the lowest temperature of its utility for certain applications. The specimen is cooled at a specified rate and examined periodically. The highest temperature at which a cloud is first observed at the bottom of the test jar is recorded as the cloud point. The lowest temperature at which movement of the specimen is observed is recorded as the pour point.

Automatic Cloud Point and Pour Point Analyzer with Integrated Panel PC

- Cloud Point Analyzer conforms to ASTM D2500, D5771, D5772, D5773 and related test methods
- Pour Point Analyzer conforms to ASTM D97, D5853, D5950 and related test methods
- Stand alone system with Integrated Touch Screen Panel PC
- Direct Cooling system eliminates the need for solvent cooling baths
- One-stage cooling system provides temperatures as low as -45°C and a two-stage cooling system down to -80°C
- Cloud Point measured by light pulsed emission on I.R spectrum through a coaxial fiber optic
- Pour Point measured by two PT100 detection probes placed on the surface of the product and a mechanical moving arm bringing the test jar to a horizontal position

Cloud Point Detection—The cloud point detection system provides automated sample testing with the accuracy and repeatability in accordance with ASTM D2500, D5771, D5772, D5773 and related international test methods. The sophisticated dynamic measuring system emits a light pulse every 1°C from a coaxial fiber optic cable positioned above the test sample. The light pulse is then reflected off the silver bottom test jar 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, signifying the cloud point of the sample. All clear and transparent oils are readily measured by the detection system, regardless of sample color.

Pour Point Detection—The pour point detection system provides automated sample testing with the accuracy and repeatability in accordance with ASTM D97, D5853, D5950 and related international test methods. The automated operation involves removing the sample from the cooling jacket at 3°C intervals and tilting it to a 90° angle as prescribed by the test method until no flow is observed. Contact of the cold sample with the two PT100 detection probes positioned just above the surface liquid level when the test jar is tilted identifies sample flow. The test jar is automatically returned to the cooling jacket and sampled again until no flow is detected for 5 seconds. The pour point result is then reported at 3°C higher than the temperature at which the sample ceased to flow in accordance with the test method.

Integrated Panel PC and Software Package—The Automated Cloud and Pour Point Analyzers are complete standalone systems featuring an integrated panel PC with an advanced software package. The 6.4" TFT/LCD touch screen display has a resolution of 640x480 with a 262K 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—For various user applications, the automated cloud and pour point systems are available with either one-stage cooling for temperatures as low as -45°C or two-stage cooling for temperatures as low as -80°C. 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



KLA-3-TS
Automatic Cloud & Pour Point
Analyzer with Touch Screen

of rapid cooling, approaching -80°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.

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.

Specifications

Conforms to the specifications of:

KLA-1-TS: ASTM D2500, D5771, D5772, D5773; DIN 51597; IP 219, IP 444, IP 445, IP 446; ISO 3015

KLA-2-TS: ASTM D97, D5853, D5950; IP 15, IP441; ISO 3016

KLA-3-TS: ASTM D97, D2500, D5771, D5772, D5773, D5853, D5950; DIN 51597; IP 15, IP 219, IP441, IP 444, IP 445, IP 446; ISO 3015, ISO 3016

Temperature Range:

One-Stage: +60°C to -45°C

Two-Stage: +60°C to -80°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: **CE**

115V ± 15% / 60Hz

220V ± 15% / 50 to 60Hz

Dimensions WxDxH,in.(cm)

26 x 23¼ x 31½ (66x60x80)

Net Weight: 176.5 lbs (80kg)

Ordering Information

Catalog No.

KLA-1-TS Auto Cloud Point Analyzer, Touch Screen (One-stage)

KLA-1-TS/2 Auto Cloud Point Analyzer, Touch Screen (Two-stage)

KLA-2-TS Auto Pour Point Analyzer, Touch Screen (One-stage)

KLA-2-TS/2 Auto Pour Point Analyzer, Touch Screen (Two-stage)

KLA-3-TS Auto Cloud & Pour Point Analyzer, Touch Screen (One-stage)

KLA-3-TS/2 Auto Cloud & Pour Point Analyzer, Touch Screen (Two-stage)

Please specify voltage requirements when ordering.

Accessories

KLA-PT100-CAL Calibration Decade Box - PT100 Simulator

KLA-DB-KIT Set of Connectors and Cables

Extended Cooling Range down to -100°C Available Upon Request.