

# AUTOMATED COLD FILTER PLUGGING POINT OF DISTILLATE FUELS

## Test Method

Determines the highest temperature at which a given volume of diesel, biodiesel or heating fuel fails to pass through a standardized wire mesh filtration device in a specified time when cooled under specified conditions. The Cold Filter Plugging Point (CFPP) of a fuel is suitable for estimating the lowest temperature at which a fuel will give trouble-free flow in certain fuel systems.

## Automatic Cold Filter Plugging Point Analyzer with Integrated Panel PC

- Conforms to ASTM D6371 and related specifications
- 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
- Option of internal or external vacuum generation system

The cold filter plugging point detection system provides automated sample testing with the accuracy and repeatability in accordance with ASTM D6371 and related international test methods. The sample is cooled according to the pre-selected temperature profile. A 20 mBar vacuum is applied to the sample at specific intervals across a 45 micron mesh filter into the aspiration glass cell assembly. If it takes more than 60 seconds for the sample to reach the upper barrier detector or more than 60 seconds to return below the detector upon release, then the test is complete and the cold filter plugging point has been reached.

**Integrated Panel PC and Software Package**—The Automated Cold Filter Plugging Point Analyzer is a complete standalone system 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 cold filter plugging point system is 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 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.

**Vacuum System**—The automated cold filter plugging point analyzer can be configured with either an internal or external vacuum generator. The internal vacuum generator provides a smaller footprint for the complete CFPP system and consists of a 350 mBar micro-pump and an electronic pressure/vacuum regulator composed of a proportional valve, pressure/vacuum control sensor, regulator for reference vacuum generation at 20 mBar and a vacuum stabilizer. The external vacuum generator includes a vacuum pump, two glass bottles and a glass cork with a U-tube, funnel and manual flow regulating valve.

**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-4-TS Automatic CFPP Analyzer with Integrated Touch Screen PC**

## Specifications

Conforms to the specifications of: ASTM D6371; IP 309, 419; EN 116  
Temperature Range: One-Stage: +60 to -45°C Two-Stage: +60 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: 115V ± 15% / 60Hz 220V ± 15% / 50 to 60Hz **CE**

## Dimensions WxDxH,in.(cm)

26 x 23¾x 31½(66x60x80) Net Weight: 176.5 lbs (80kg)

## Included Accessories

Calibrated Aspiration Pipette complete with Filter Kit for CFPP  
Cord Cable without plug Calibrated Test Jar User Manual  
Connection Tube for Vacuum System Operating Software Spacer

## 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

## Ordering Information

<b>Catalog No.</b>	Automatic Cold Filter Plugging Point Analyzer with Touch Screen, (One-stage)
<b>KLA-4-TS</b>	Automatic Cold Filter Plugging Point Analyzer with Touch Screen, (Two-stage)
<b>KLA-4-TS/2</b>	Internal Vacuum System for Cold Filter Plugging Point Analyzer
<b>KLA-4-IVPS</b>	External Vacuum System for Cold Filter Plugging Point, 115V
<b>KLA-4-VPS(115)</b>	External Vacuum System for Cold Filter Plugging Point, 220V
<b>KLA-4-VPS(220)</b>	

*Please specify voltage requirements when ordering.*

## Accessories

<b>KLA-PT100-CAL</b>	Calibration Decade Box - PT100 Simulator
<b>KLA-DB-KIT</b>	Set of Connectors and Cables

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



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