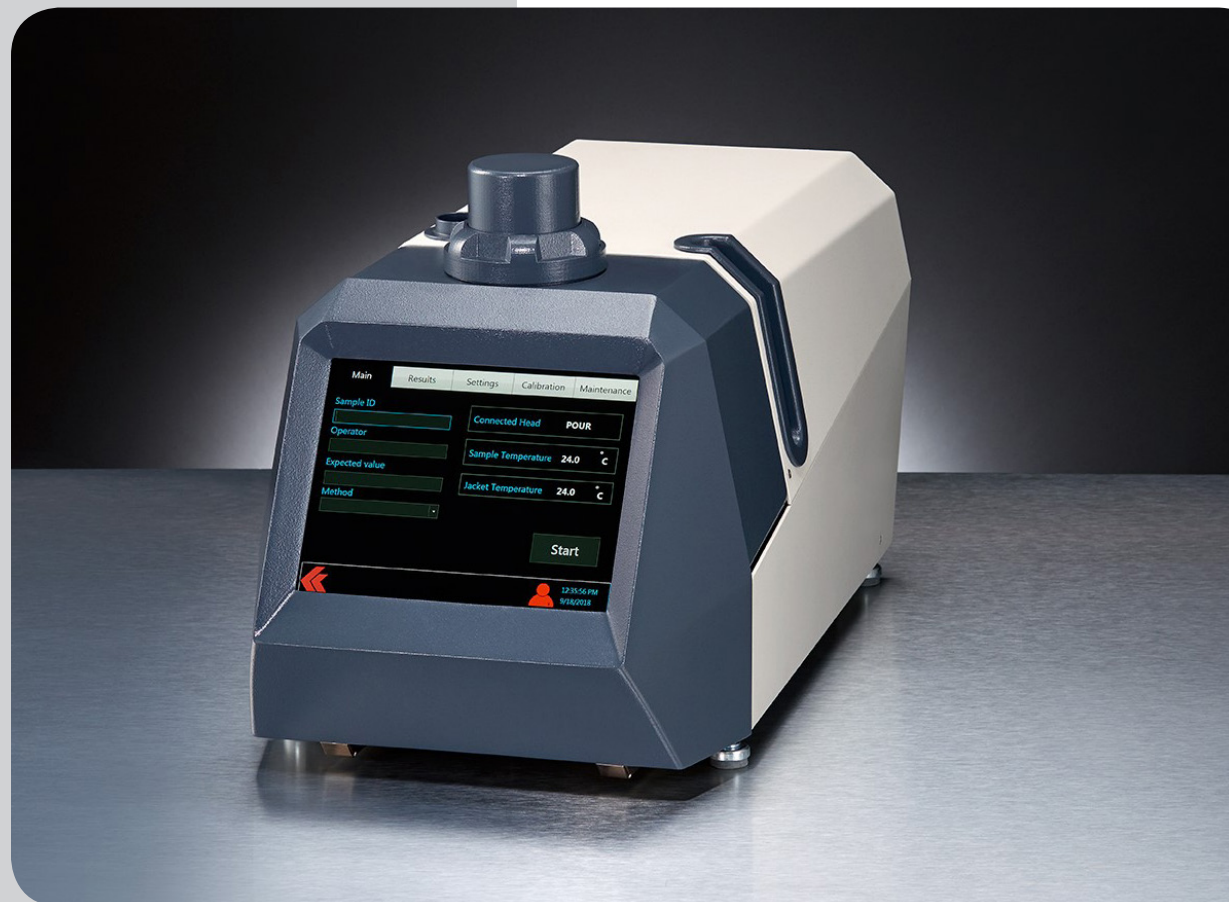


# automatic cloud and pour point analyzer



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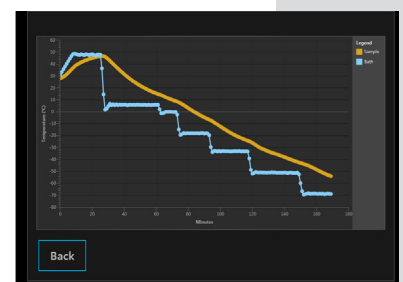
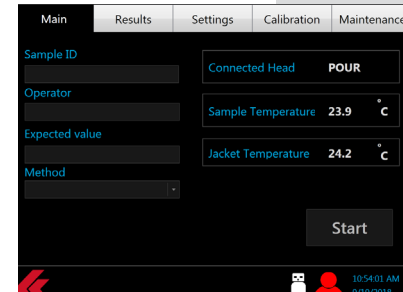
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# automatic cloud and pour point analyzer

The K77000 Automatic Cloud and Pour Point Analyzer is a state of the art piece of equipment for measuring cloud point by Optical Detection and pour point with the Automatic Tilt Method. The cloud point is an index of the lowest temperature of a petroleum product or biodiesel fuels utility for certain applications. Wax crystals of sufficient quantity can plug filters used in some fuel systems. The pour point of a petroleum product is an index of the lowest temperature of its utility for certain applications. Flow characteristics, such as pour point, can be critical for the correct operation of lubricating oil systems, fuel systems, and petroleum blending and pipeline operations.



The screenshot shows the 'Calibration Summary' screen. It features a navigation bar at the top with tabs for 'Main', 'Results', 'Settings', 'Calibration', and 'Maintenance'. The 'Calibration' tab is active. The screen displays a 'Ticket Summary' for 'Sample Calibration Jacket Calibration Calibration Settings'. The 'Calibration Summary' section includes the following data:

| Sample Calibration   |                              | Date of Cal: 6-20-2018        |
|--|------------------------------|-------------------------------|
| Three point Electronics Calibration                                    |                              |                               |
| Uncorrected Temperature (°C)   | 0.2                          | -123.3 63.5                   |
| Corrected Temperature (°C)   | 0.0                          | -125.4 64.3                   |
| Multipoint RTD Offset Calibration                                      |                              | Date of Cal: 6-4-2018         |
| Offset (60°C, 40°C, 20°C, 0°C, -20°C, -40°C, 60°C, 80°C, 100°C, 120°C) | 0, 0, 0, 0, 0, 0, 0, 0, 0, 0 |                               |
| Jacket Calibration   |                              | Date of Cal: 6-20-2018        |
| Ref Cal Temp 1 (°C)  | 0.4                          | Jacket Cal Temp 1 (°C): -0.0  |
| Ref Cal Temp 2 (°C)  | -17.2                        | Jacket Cal Temp 2 (°C): -17.9 |

A 'Print' button is located at the bottom right of the table.

## test method

ASTM D5771 - For the description of the determination of the cloud point of petroleum products and biodiesel fuels that are transparent in layers 40 mm in thickness, by an automatic instrument using an optical device. This test method covers the range of temperatures from  $-60^{\circ}\text{C}$  to  $+49^{\circ}\text{C}$  with temperature resolution of  $0.1^{\circ}\text{C}$ .

After insertion of the prescribed test jar containing the specimen into the apparatus, and the initiation of the program, the specimen is cooled incrementally according to the cooling profile listed in Table 1 of the method. The specimen is continuously monitored by a reflective optical system for the formation of a crystalline structure. When the crystallization of the wax in the specimen is detected by the optical system, the temperature is recorded to within  $0.1^{\circ}\text{C}$  resolution. The specimen is then heated to facilitate the start of the next test.

ASTM D5950 - For the determination of pour point of petroleum products by an automatic instrument that tilts the test jar during cooling and detects movement of the surface of the test specimen with an optical device. This test method is designed to cover the range of temperatures from  $-66^{\circ}\text{C}$  to  $+51^{\circ}\text{C}$ .

After preliminary heating, the test specimen is inserted into the automatic pour point apparatus. After starting the program, the specimen is cooled according to the cooling profile listed in the ASTM Method and examined at either  $1^{\circ}\text{C}$  or  $3^{\circ}\text{C}$  intervals. The lowest temperature at which movement of specimen is detected, by the automatic equipment, is displayed as the pour point.

## key features

### Fully Automatic

- Automatic determination of cloud point by Optical Detection
- Automatic determination of pour point via the Automatic Tilt Method
- Conformance to ASTM D5771 and D5950

### High Performance

- Wireless Cloud Point Head
- Wireless Pour Point Head
- Integrated Cooling System
- Automatic Calibration by means of 10 point RTD Calibration, Sample Calibration, and Jacket Calibration

### Industrial Touch Screen User Interface

- 10.4-inch Color Touch Screen is built-in

### USB & Network Connections

- 4 USB interfaces
- Internet (Ethernet) Line

## software capabilities

- Standard test method are preprogrammed or user-defined test programs can be created.
- Clear graph of temperature vs. time for sample and bath temperatures.
- Automated Calibration Features
  - Three Point Electronics Calibration
  - 10 Point RTD Offset Calibration



Main Results Settings Calibration Maintenance

|                          |         |                          |         |
|--------------------------|---------|--------------------------|---------|
| Sample Temperature       | 24.4 °C | Jacket Temperature       | 25.4 °C |
| Connected Head           | POUR    | Jacket Position          | POUR    |
| Light Emitter value (mA) | 0.0     | Light Receiver value (V) | 2.48    |
| Smart Tilt               |         | Light Emitter ON         |         |
| Go Pour Pos              |         | Chiller ON               |         |
| Go Home Pos              |         | Heater ON                |         |

Heater turns Off for 30 seconds only

12:42:46 PM 5/16/2018

## dimensions W x D x H, in. (cm)

31.75 x 66.68 x 39.37 cm (12.5 x 26.25 x 15.5 in)

Weight: 41 kg (90 lb)

## specifications

Detection: Cloud Point: Optical Detection

Pour Point: Tilting Method

Cooling: Internal cooling system

Temperature Range: -105°C to +50°C (-157°F to 122°F)

Tilt Interval: 1°C or 3°C as per test method

User defined for custom method ( 1 to 5°C)

Temperature Accuracy:  $\pm 0.1^\circ\text{C}$

Interfaces: USB (4), Ethernet

Display: 10.4 in. Color Touch Screen

Password Protection: Multi-level password capability

## ordering information

| catalog no. | description  |
|-------------|--|
| K77000      | Automatic Cloud and Pour Point Analyzer, 110 – 240V, 50/60Hz |

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