

# AUTOMATED ANALYZERS for COLD PROPERTIES WITHOUT THE USE OF A COOLING CRYOSTAT

- Automated Analyzers for:
  - Pour Point
  - Cloud Point
  - Cold Filter Plugging Point
  - Freeze Point
- No Cryostat Required
- No Hazardous Alcohol Required
- Fully Automated
- Self Contained
- PC Controlled

Many models are available using direct refrigeration technology for cooling automated analyzers for Cloud Point, Pour Point, Cold Filter Plugging Point, and Freeze Point. The metal test jacket is cooled directly by the refrigerant, thus replacing the middle step of first cooling the hazardous alcohol and then pumping the cold alcohol to the metal test jacket.

The advantage of direct refrigeration is rapid cool down to test temperature (within a matter of minutes) as opposed to hours as is the case with the use of a bulky floor model cryostat.

**The Automated Cloud Point Analyzer** detects the cloud point when the fiber optics shows a reduction of the pulsing green light that reflected from the bottom of the silvered test tube.

**The Automated Pour Point Analyzer** actually lifts the test sample from the cold jacket and tilts the sample to test for its flow. Flow is detected by a sonic detector reflecting off the sample surface.

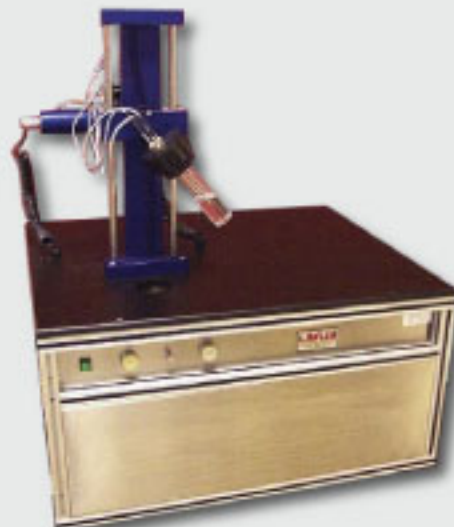
**The Automated Combination Cloud and Pour Point Analyzer** in the same unit. The cloud point analyzer as does the pour point analyzer even lifts from the test bath when detecting for cloud, much in the same manner as done in the manual test. The detection mechanism is the same as in the above described analyzers. If so selected from the software, the cloud point is measured first followed by the measurement for pour point on the same sample without operator intervention.

**The Automated Cold Filter Plugging Point Analyzer.** The vacuum is applied every degree as the sample cools and its aspiration time recorded and plotted. The result is reported when the aspiration time exceeds 60 seconds. Each test position includes a set of two jars for vacuum control as specified by ASTM D6371 and IP-309.

**The Automated Freeze Point Analyzer.** The sample cooling is programmed to mimic the cooling profile the sample experiences in the ASTM D2386 manual method. Freezing is detected by a light beam reduction reflected from a mirror as the sample freezes.

## Also for Methods:

ASTM	D97, ASTM D2500, D2386, D6371
ISO	3013, 3015, 3016
IP	15, 309
FTM	791-201, 1411
DIN	51 597, 51 421
NF	T60-105, M07-048



▲ Model DR-20L



▲ Model DR-34L