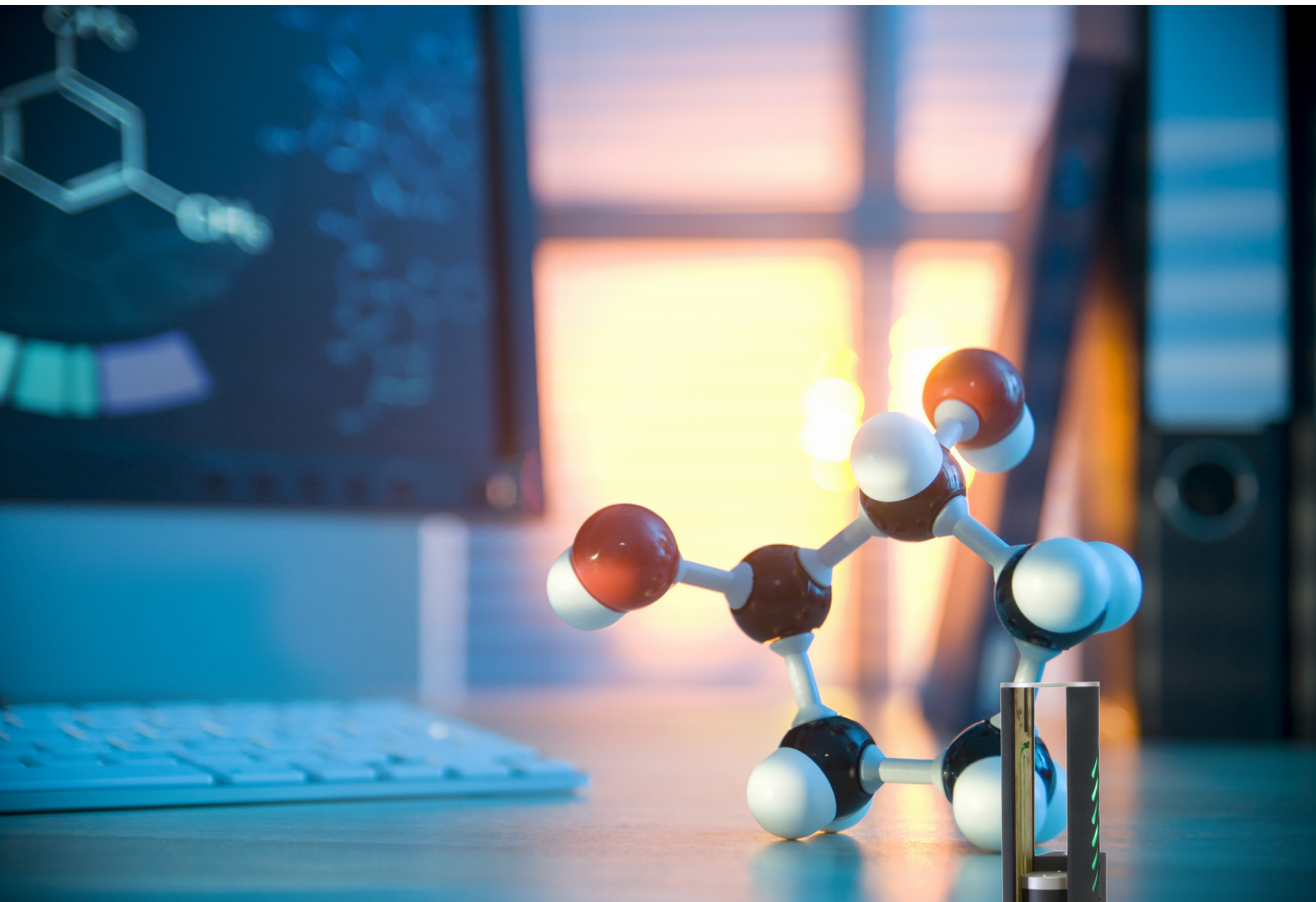# ORBIS BV

AirSTAR

Innovation in cold properties testing

Cloud & Pour Point testing
Cold Filter Plugging Point testing

by Orbis BV

AirSTAR - Cold Properties Testing

AirSTAR follows the traditional test methods. The most well-known being ASTM D97 (Pour Point), ASTM D2500 (Cloud Point) and ASTM D6371 (Cold Filter Plugging Point.

AirSTAR can be used as a dedicated CFPP "only" or Cloud / Pour Point "only" Tester.
Or, conveniently, as a **3-in-1 solution**, by simply swapping CFPP and CPPP Heads between tests.
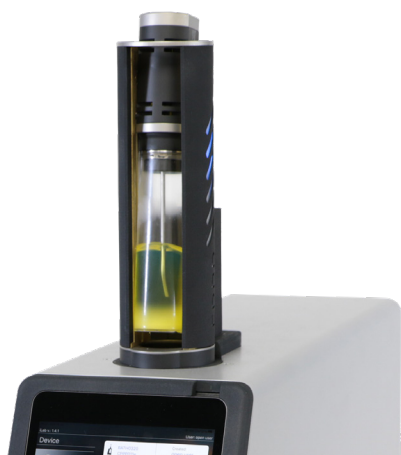
Everything needed for the test is inside the **CFPP Head**:

Vacuum system, sample detection, pipette, test jar, temperature probe, 45μm filter, electronics, test control and communication with the ColdBlock.

Cleaning-Docking Station. Ideal for CFPP cleaning cycles. Or just as a docking station in a multiple-head setup.

The **CPPP Head**'s built-in camera detects Cloud and Pour Point as accurate as the human eye would.

As the manual methods D97 and D2500 describe, the jar is lifted out from the cooling bath for sample detection.

ColdBlock is AirSTAR's cooling system. Even for temperatures down to -105°C it does not require an external chiller.

Simply place a Head on top ; ColdBlock detects it and connects it.

Software

Besides traditional test results, AirSTAR gives unique insight in the test. Consider for instance "anomalous aspiration" and "CFPP-2". Or Cloud / Pour point images, taken by the camera during the test, that are stored inside the test results.

Integrate AirSTAR in any laboratory data workflow with its modern ways of data handling. Print, or export PDF/JSON/XML format to LIMS, Windows PC or network.
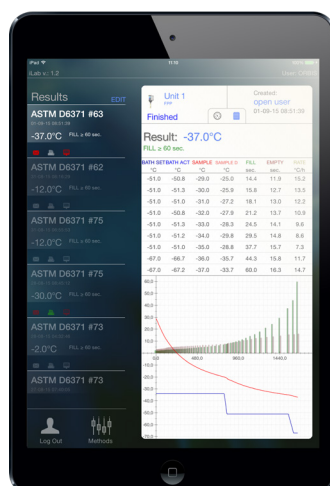
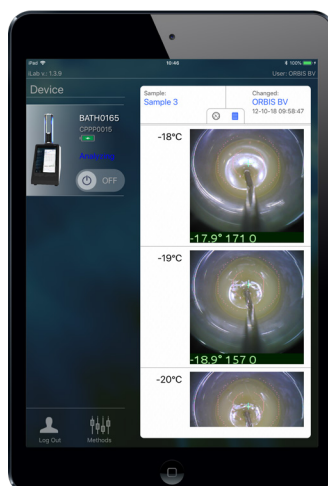The iLabCB app is license-free, continuously supported by Orbis and available as free download in the App Store.

AirSTAR

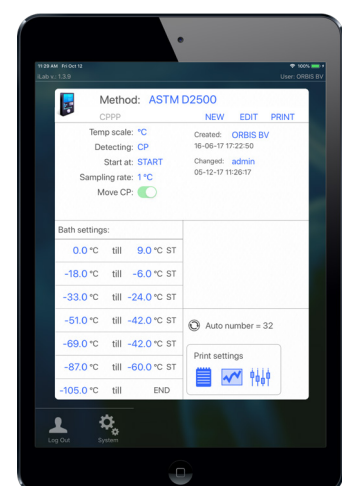**The Cold Properties Testing Solution for:**

- **Refineries**
- **Additive makers**
- **Lubricant makers**
- **Independent laboratories**
- **Biofuel plants**
- **Mobile labs**
- **Distribution facilities**

Typical CFPP result of a -37°C test.

Images taken during PP test are stored in the result.

Create methods for linear cooling profiles, custom test intervals, vacuum, etc.

Technical specifications

CPPP Head

Methods, automated execution of:	Cloud point: ASTM D2500, ISO 3015, IP 219, EN 23015, JIS K2269 Pour Point: ASTM D97, D6892, D5853, ISO 3016, IP 15, JIS K2269, Chinese GB/T3535
Sample detection	HD camera in combination with smart detection algorithm.
Sample temperature measurement	Pt100 metal thermometer. 0.01°C resolution. °C/°F. Automatic probe ID detection with built-in calibration data storage. Calibration certificate included with probe. Two sizes: long probe (CP) and short probe (PP).
Test settings	Start test at room- or custom temperature. PreCool function brings bath jacket to first heating or cooling step before entering sample jar. Test intervals programmable.
Power	Wireless, powered from ColdBlock / Cleaning Docking Station. Micro USB for power adapter when CFPP Head is used in manual cooling bath.
Weight	<1 kg

CFPP Head

Methods	EN 116, IP 309, ASTM D6371, JIS K2288, EN 16329 (linear cooling method)
Sample detection	Laser technology: 1 laser in bottom of pipette, 2 lasers in top. Detection is not affected by condensation.
Vacuum control	Built-in vacuum pupm with real-time pressure regulation. Both constant and dynamic vacuum profiles programmable. Results contain actual vacuum profile of each singe °C aspiration.
Sample temperature measurement	Pt100 in-glass thermometer. 0.01°C resolution. °C/°F. Automatic probe ID detection with built-in calibration data storage. Calibration certificate included with probe. Metal probe optionally available.
Test Settings	Start test at room-, custom- or Cloud Point-related temperature. PreCool function brings bath jacket to first cooling step before entering sample jar. Test intervals programmable.
Cleaning	Done in Cleaning-Docking Station, in addition to cleaning routine as prescribed in the test method.
Power	Wireless, powered from ColdBlock / Cleaning Docking Station. Micro USB for power adapter when CFPP Head is used in manual cooling bath.
Weight	<1 kg

ColdBlock

Cooling	Integrated cooling based on stirling motor technology. Maximum capacity -105°C to 65°C. No external chiller, liquids or moving parts involved. Stepped and linear cooling profiles programmable. Linear cooling speed capacity 1°C - 60°C p/hr.
Software interface	iPad mini (Retina touch screen) fixed inside ColdBlock. iLabCB software application.
Connectivity	RJ45 LAN port for connection to Windows PC / network / LIMS / printer.
Sample temperature measurement	Pt100 in-glass thermometer. 0.01°C resolution. °C/°F. Automatic probe ID detection with built-in calibration data storage. Calibration certificate included with probe. Metal probe optionally available.
Data formats and storage	PDF (send & print), XML, JSON. 64Gb
Cleaning	Done in Cleaning-Docking Station, in addition to cleaning routine as prescribed in the test method.
Power	Wireless, powered from ColdBlock / Cleaning Docking Station. Micro USB for power adapter when CFPP Head is used in manual cooling bath.
Weight	25 kg
Dimensions	16cm x 59cm (W x D)

AirSTAR ordering information

AirSTAR instruments must be ordered by selecting a combination of individual modules:

ColdBlock cooling unit

Part No. 920000

CFPP Head

Part No. 921001 *(no consumables included)*

CFPP Head Start kit

Part No. 921030

Includes:

- In-glass Pt100 probe incl. cal. report
- CFPP pipette
- CFPP test jar
- CFPP filter unit
- CFPP filter holder + 45µm filter
- Spacer cage ASTM D6371
- Hose & pipette connector

CFPP consumables

- Part No. 929005 - Set of 4 pipettes
- Part No. 929002 - Set of 9 test jars
- Part No. 929006 - Set of 2 Pt100 probes
- Part No. 929007 - Spacer cage ASTM D6371
- Part No. 929007 - Spacer cage EN16329
- Part No. 929009 - Filter holder + 45µm filter

CPPP Head

Part No. 922015 *(no consumables included)*

CPPP Head Start kit

Part No. 922030

Includes:

- Pt100 for Cloud Point
- Pt100 for Pour Point
- CPPP Test jar

CPPP consumables

- Part No. 929001 - Set of 9 test jars
- Part No. 929043 -Pt100 for Cloud Point
- Part No. 929044 -Pt100 for Pour Point

Cleaning-Docking Station

Part No. 922016 *(no consumables included)*

CD Station Start kit

Part No. 922031

Includes:

- Cleaning beaker 150 ml
- Drip tray
- Petri dish glass

ALSO MADE BY ORBIS IN THE NETHERLANDS:

STARDist Automatic Distillation Unit

ORBIS BV

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