ORBIS BV

Innovation in distillation

STARDist Lite

Semi-Automatic Distillation Unit for manual distillation testing

by Orbis BV

STARDist Lite Features

Condenser Cooling

Liquid-free condenser cooling equipped with peltier elements and heat-pipe assisted heat sinks ensures powerful and maintenance friendly operation. Temperature “ramp up” function to prevent wax forming in the condenser tube when testing heavy products.

Touch screen interface

STARDist Lite is equipped with a touch screen (iPad mini) that lets users control the heater lift, heater power, condenser temperature and fans for heater cooling. In combination with the AirProbe D86 digital temperature sensor it offers a wide range of functions for semi-automatic D86 testing.

Flask Installer

The simple and elegant flask holder design ensures easy and correct positioning of the distillation flask for both 125 ml and 200 ml flasks. Moreover it ensures that the probe’s height in relation to the flask’s side arm is always correct.

End point detection*

Final Boiling Point is detected automatically. The unique built-in Optical Dry Sense automatically detects the moment when the flask is empty and records the corresponding vapor temperature as Dry Point.

Fire Safety

Sensitive UV fire detection sensor and connection to N / CO2 for **built-in fire extinguisher**.

Automatic Heater Lift

The new automatic heater lift applies the correct upward pressure to the flask and shortens the after-test cooling period by automatically lowering the heater when the test is finished.

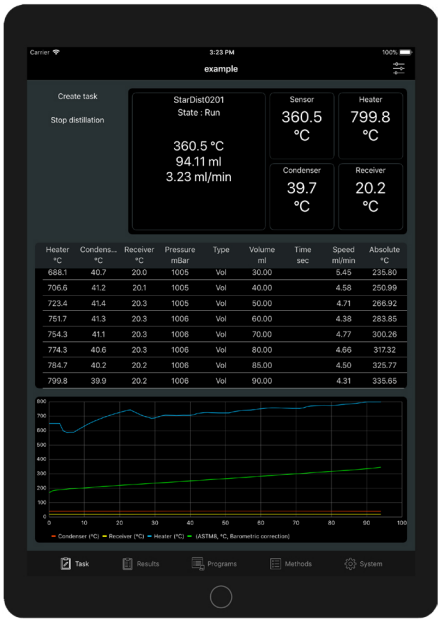
Hands-off Heater Control*

For repeating samples types, the heater settings of previous tests can be automatically evaluated and optimized in the sample’s program settings, to “hands-off” control the heater power during future tests of the same sample.

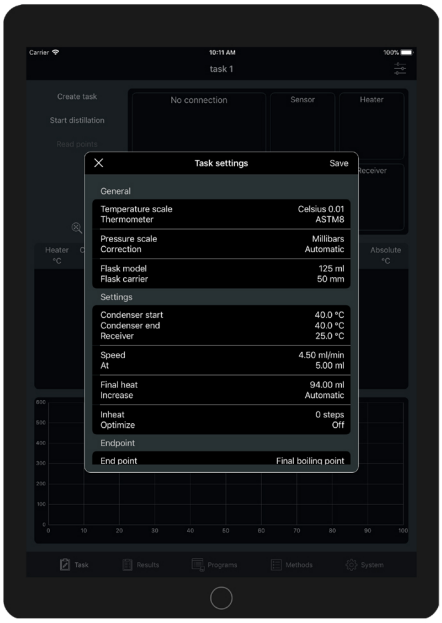
Fast Heater Cooling

2 adjustable and powerful fans ensure quick heater and flask cooling after the test is finished.

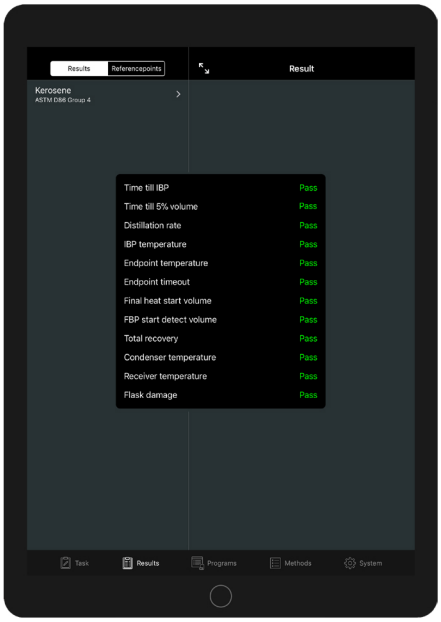
**Requires additional AirProbe D86 kit*



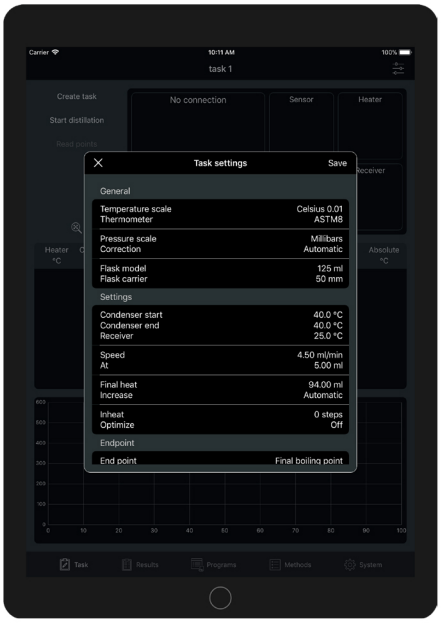
Intuitive and easy to use interface helps operators to start and run distillation tests without making mistakes.
Quick real-time overview of test data in the task screen, with more details just one click away.



Create and customize program settings for specific products, or simply “Optimize” the program based on automatic suggestions from the previous test. Easy 1-step program creation based on pre-defined method settings. Requires authorized user and password.



“Pass / Fail” test validation helps operators process only those results that are obtained from correctly executed tests. The validation is based on pre-defined method limits such as “Time to IBP”, “IBP/FBP temperature”, “Condenser/receiver temperature”, distillation rate, etc.



Test reports are printed on a wired kiosk printer or on any AirPrint device. RJ45 port and setup menu available for FTP connection to LIMS or Windows PC.
Local storage capacity: 20,000 samples, 1,000 programs, 100 users.

STARDist Lite

The semi-automatic distillation unit for manual distillation testing

Innovation in distillation

Hardware

Based on the cabinet of the fully automatic distillation unit STARDist, STARDist Lite is built with the same high quality hardware, and equipped with many of STARDist's advanced features such as the solid state condenser unit, low mass/low voltage heating system, automatic heater lift, double fans for fast heater cooling, built-in touch screen and the operator friendly flask installer.

Automation

Programmable condenser temperature settings (including "ramp-up" function) and programmable initial heat settings make for a more hands-off approach and increase the repeatability of distillation behaviour and results. The automatic heater lift and heater cooling increase the operator-ease even further.

STARDist Lite + AirProbe D86

Replace mercury for Safety, Repeatability and User-friendliness

About AirProbe D86

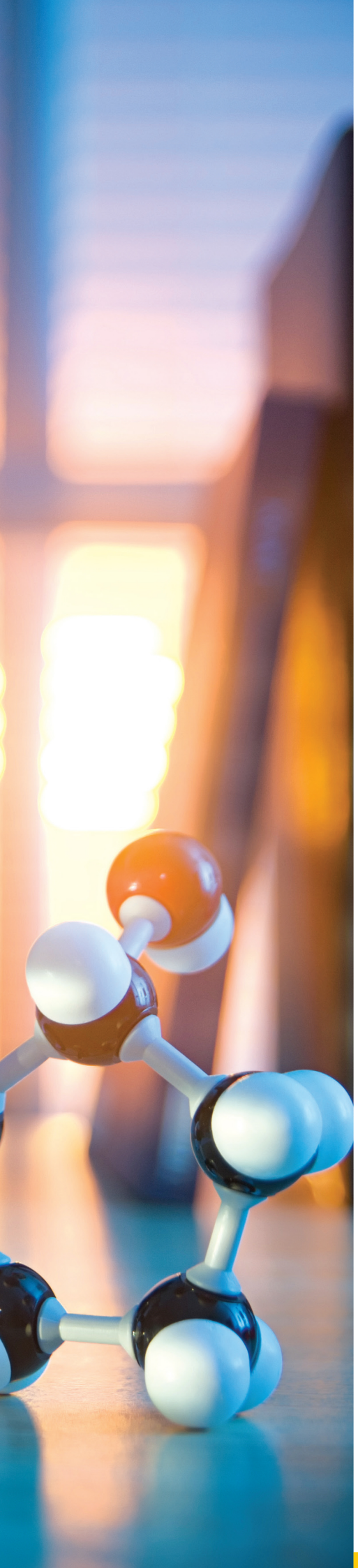
In short

AirProbe is a compact device that fits onto a PT-100 temperature probe. It communicates over bluetooth with a free iOS app that lets users monitor and control the distillation test and record temperature, speed and run-time at predefined volume points. Custom test programs are easily created, and the iPad mini can store up to 20.000 test results.

Built-in barometer

Temperature data are corrected to atmospheric pressure directly from AirProbe's built-in barometer.

Manufactured in The Netherlands



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Mercury behavior correction

Unique about AirProbe D86 is the dynamic simulation of Mercury ASTM 7C & 8C thermometer behavior, making real-time corrections for emergent stem and lag-time. Instead of needing two different mercury thermometers for 7C & 8C tests, one single AirProbe thermometer is used for both 7C and 8C simulations.

Calibration

Each AirProbe PT-100 thermometer includes a traceable calibration report. The calibration data are entered through the iPad mini app and stored on the thermometer's internal chip. The AirProbe device recognizes each individual PT-100 and its calibration data through its unique ID. Both PT-100 and AirProbe device can be calibrated by third pary calibration services.

Increased automation

With automatic temperature recording, FBP detection, time control, speed feedback, results validation, LIMS/print options and an app loaded with features, AirProbe D86 further increases the already high level of automation in STARDist Lite.

Technical specifications

Methods	ASTM D86, D1078, D850, E123, IP195, DIN51751, ISO 3405, GOST 2177, JIS K2254.
User interface	iPad mini with STARDist Lite application. *Available in App Store. App & updates are free of charge.*
Operator support features	Flask Installer: ensures easy and correct upright flask positioning for both 125 ml and 200 ml flasks. The vapor probe's height position relative to the flask's side arm is always correct thanks to the vapor probe design in combination with the strict flask dimensions. START check: 1. Heater plate size. 2. PT-100 probe placed in flask. 3. Heater door closed. (*Must be confirmed before test to start)*
Heating control	Manual control through touch screen or automated from preset program optimization.
Heating system	Low mass/low voltage heater. 2 user adjustable fans for extra fast cooling after test. Automatic heater lift with correct flask pressure & positioning. Automatic shut-off in case of fire.
Condenser cooling	Solid state: based on Peltier elements with heat-pipe assisted heat sinks and silent fans for heat dissipation. No liquids involved. Condenser temperature can be increased during the distillation to deal with "light start / heavy end" products to prevent both evaporation loss and product waxing in the condenser tube. Temperature range: 0 – 65 °C. Resolution 0.1 °C.
Residue & Loss	Manual measurement or preset. Loss correction is automatically applied to temperature readings.
Vapor temperature measurement	Standard: Mercury 7C or 8C thermometer. AirProbe D86 upgrade: PT-100 class A probe with 10-point calibration data storage and automatic probe ID detection. True dynamic simulation of ASTM 7 & 8 in-glass thermometer behavior (lag time and emergent stem). Resolution: 0.01 °C. Range: 0 – 450 °C on ASTM and 0 – 500 °C on absolute.
Dry point	Optical Dry Sense: IR sensor for automatic detection of the dry point. No dry point probe required.
Pressure	Built-in pressure sensor. Automatic correction of temperature results to atmospheric pressure. Range: 70 to 110 kPa, resolution 0.1 kPa.
Fire safety*	UV sensor for fire detection. Built-in fire extinguisher. N or CO2 supply required from lab (connection hose is supplied). **Requires ordering the additional Fire Extinguisher.*
System health	Automatic quick system health check before every test to ensure all components are in excellent state.
Dimensions	Dimensions: 40cm x 40cm x 63cm (WxDxH), weight: 40 kg
Voltage	100-240 VAC 50/60 Hz
Power	1200 W

STARDist ordering information

STARDist Lite

Semi-automatic Distillation Unit
Part No. 914030. Includes:

- Distillation flask 125 ml
- Centering device for 125 ml flask
- 100 ml graduated receiver with stand
- Stopper cap
- 38 mm ceran heater plate
- 50 mm ceran heater plate
- Boiling stones 25 gr.
- Condenser cleaning tool

ASTM D1078 / D850 pack

(Add-on pack for main unit 914000)
Part No. 919114. Includes:

- 25 mm ceran heater plate
- 32 mm ceran heater plate
- Distillation flask 200 ml straight neck
- Centering device for 200 ml flask

Optional: AirProbe D86

(Digital thermometer for distillation)
Part No. 931250 Includes:

- PN. 931100 - AirProbe D86 Device
- PN. 931200 - PT-100 temp. probe for D86 including calibration report

Accessories & consumables:

Part No. 919061 - Heater element for STARDist
Part No. 919120 - Centering device 125 ml flask
Part No. 919121 - Centering device for 200 ml flask
Part No. 919030 - Set of 5: Distillation flask 125 ml
Part No. 919031 - Set of 5: Distillation flask 200 ml
Part No. 10353 - Set of 5: 100 ml graduated receiver
Part No. 11003 - Distillation stopper cap
Part No. 919033 - 25 mm ceran heater plate
Part No. 919034 - 32 mm ceran heater plate
Part No. 919035 - 38 mm ceran heater plate
Part No. 919036 - 50 mm ceran heater plate
Part No. 910081 - Boiling stones 25 gr.
Part No. 919039 - Condenser cleaning tool

OTHER ORBIS BV PRODUCTS:

AIRSTAR CFPP

Automatic Cold Filter Plugging Point Testing

AIRSTAR CPPP

Automatic Cloud and Pour Point Testing

Features:

- ColdBlock: AirSTAR's integrated cooling unit (to -105°C)
- CFPP & CP/PP Heads: easy to use & exchangeable
- Completely according to traditional test methods

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Your local distributor: