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 (iPod Touch) 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.

Heater

The low mass / low voltage heater provides accurate and powerful heating control, both for situations where more as well as where less heat is to be applied quickly.

Fire Extinguisher

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.

Advanced diagnostics

The instrument is equipped with software for advanced diagnostics and settings for service and maintenaince. Options include: monitoring mains voltages sine wave, fuse protection setting, diagnostics for heater, condenser, internal sensors and more.

Fast Heater Cooling

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

*Requires additional AirProbe D86 kit

STARDist Lite
The semi-automatic distillation unit for manual distillation testing

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 iPod 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.

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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 iPod 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	iPod with STARDist Lite application. *Available in App Store. App & updates are free of charge.*
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.
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 (not supplied by Orbis BV). 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.
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
Lab conditions	Environment temperature 10°C – 30°C. Environment humidity up to 80 % at 30°C.

STARDist ordering information

STARDist Lite
Semi-automatic Distillation Unit
Part No. 914000. Includes:

- Heater
- 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
- *Mercury 7C & 8C thermometer not supplied by Orbis BV due to EU regulation no. 847/2012*

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. 931000 Includes:

- PN. 931100 - AirProbe D86 Device
- PN. 931200 - PT-100 temp. probe for D86 including calibration report
- PN. 931300 - iPod Touch including free AirProbe D86 app

Accessories & consumables:

Part No. 919061 - Heater for STARDist
Part No. 919107 - Centering device 125 ml flask
Part No. 919108 - 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. 919051 - Set of 5: 100 ml graduated receiver
Part No. 919071 - Set of 5: 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. 919081 - 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: