

Benchmark in Atmospheric Distillation Testing

OPTIDIST™


www.paclp.com



HERZOG
by **PAC**

The Optimal Solution in Distillation Testing

- User-friendly, straightforward operation with superior precision from the first run
 - Unparalleled versatility for significant laboratory time and cost savings
 - Enhanced built-in instrument safety features
- In compliance with ASTM D86 (group 0,1,2,3,4), D1078, D850, EN ISO3405, ISO 918, IP123, IP195, DIN51751, JIS K2254, NFN 07-002

OPTIDIST™, THE BENCHMARK IN ATMOSPHERIC DISTILLATION TESTING

With eighty years of combined experience between the companies Walter Herzog and ISL in designing and manufacturing automatic distillation equipment, they directed PAC to the development of the most revolutionary automated distillation analyzer ever built. OptiDist™ is the State-of-the-Art Optimal Solution for performing atmospheric distillation, offering the most precision and ease of use ever seen. The versatile design enables multi-methods and non-standard capability and therefore can easily be adapted for different applications. The testing and results are in full compliance with all atmospheric distillation methods.

EASY TO USE, ONE BUTTON STRAIGHTFORWARD OPERATION

Only the OptiDist™ enables truly “one button,” straightforward operation. The easy to use distillation analyzer with advanced Man Machine Interface (MMI) features, such as the built-in Optimizer, contributes to a trouble-free operation requiring less operator expertise. Without preliminary trials and manual heater settings, the operator selects the test method and starts the distillation by just pressing the “Start” button.

MISTAKE PROOF UNIT

- With one hand quickly install the flask with automatic detection
- Intelligent Vapor Probe memorizes calibration data and does not require manual adjustment in the flask neck
- Automatic base plate detection
- Self-positioning heater lift



EASY TO OPERATE TOUCH SCREEN INTERFACE

Start a test in only three steps:

1. Enter sample number
2. Select product (e.g. distillation group)
3. Push start button

The user does not have to enter individual heater parameters per sample.

CORROSION RESISTANT RECEIVER CHAMBER

- Automatic charge volume measurement for precise sample volume
- Automatic alarm for condenser cleaning

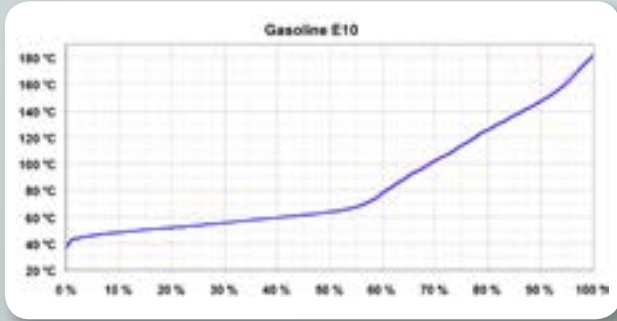
QUICK AND EASY FLASK INSTALLATION IN LESS THAN 10 SECONDS!

Operators no longer need to deal with distillation flask issues, such as difficult installation and risks of breaking off the arm when setting it into the baseplate. The Optidist enables the operator to install the flask (1 and 2) and the self-positioning heater lift adjusts the settings automatically, using only one hand and all within seconds!

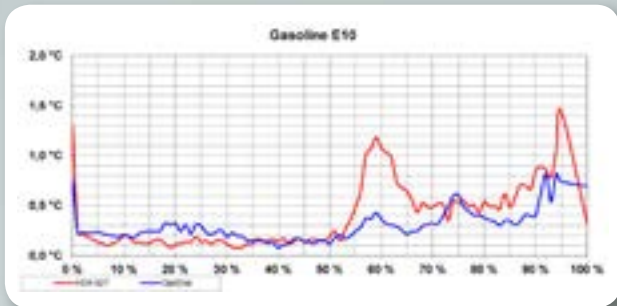


SUPERIOR PRECISION FROM THE FIRST RUN

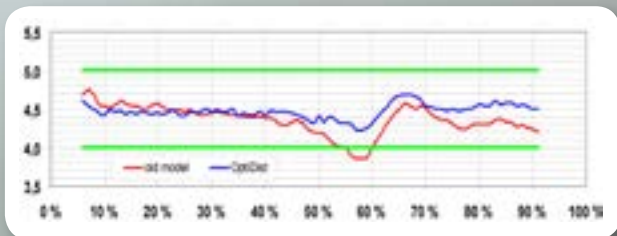
The OptiDist™ automatically sets the optimal distillation conditions for any sample through the unique heating optimizer technology. It delivers up to two times better precision for all common distillation samples. No more precious time is lost on repeating tests; you get perfect results from the first run, even for “unknown” samples! The following example shows a precision study for ethanol blends in which units with and without the Optimizer technology were compared. The study shows a significant improvement in precision performance for units with the Optimizer.



Boiling Curve of a Typical Gasoline E10



Precision Data Comparison



Distillation Rate Comparison

Due to the azeotropic behavior of ethanol blends, the previous generation of instruments cannot maintain the distillation rate within 4 to 5 ml/min. The units with advanced Optimizer technology can maintain the distillation rate much better since the Optimizer technology considers the liquid temperature as an additional regulation parameter. The study shows the results are within the method limits of 4-5 ml per minute.

ADVANCED, BUILT-IN SAFETY FEATURES

The OptiDist assures perfect repeatability of distillation conditions without compromising safety. The optimized heating prevents critical overheating of the distillation flask, improves flask life-time, and protects from potential fires. The Optidist has a built-in fire extinguisher to further increase safety.

The VOC- blower reduces volatile organic compound (VOC) emissions before the operator opens the receiver chamber and protects the operator from exposure to harmful sample vapours.

STATE OF THE ART OPTIDIST TECHNOLOGY

FULLY AUTOMATED REGULATION WITH UNIQUE OPTIMIZER

- Fully automatic initial heat regulation; no sample specific heat parameters required
- Fully automatic final heat adjustment for the last 5 ml to distillate
- Automatic residue and loss calculation
- Perfect results on the first test, even for “unknown” samples

CRUDE ANALYSIS WITH BOOST HEATER

The incorporated boost heater is a unique OptiDist feature that allows running crude oil samples according to GOST 2170 part B.

SIGNIFICANT LABORATORY TIME AND COST SAVINGS

	A Typical distillation analyzer	The Herzog OptiDist
Operator Training Cost savings	Complicated operation requires system users to be extensively trained.	High level of automation makes the system mistake proof; No extensive operator training required.
Laboratory efficiency	2 - 3 attempts are required to have the correct initial heating setting to meet the IBP and 5% with the first test as required by the method	The Optimizer ensures perfect results starting with the first run without time-consuming and costly re-work
Time Savings	Analysis time is 135 minutes	Analysis time is 35 min; time-saving of 60%!
Sample Volume Savings	200 - 300 ml sample volume required	Only 100 ml required for a full distillation test



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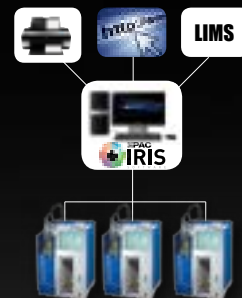
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PAC Authorized Representatives are also located in most countries worldwide. For more information visit www.pacpl.com

Multiple Units network operation with PAC IRIS Software for OptiDist

Users can choose to have the OptiDist operate as a stand-alone unit or benefit from using it in a PC-controlled network with PAC IRIS Software:

- Simple, straightforward connection setup and use
- Connect lab instruments locally or from anywhere in the world
- Password protection at various levels
- User traceability
- Designed for regulatory compliance
- Integrated statistical process control charting
- Remotely control multiple instruments from a single workstation
- Consistent look and feel interfaces for easy adoption
- Customization available to meet laboratory specific needs
- Centralized database for results, products, methods and reports
- Share printer for multiple instruments
- Centralized LIMS transfer and configuration



SPECIFICATIONS

Ordering Information	OptiDist™, a compact self-contained instrument with factory filled CFC-free cooling system, delivered with 125ml flask, 100ml receiver cylinder, vapor probe with centering device, heater plates 38 and 50mm, flask connection silicone tube, receiver cap and condenser cleaner
Standard Test Methods	ASTM D86 (group 0,1,2,3,4), D1078, D850, IP195, IP123, DIN51751, NFM07-002, EN ISO3405, JIS K2254, ISO918; ASTM D189, D524, D4350. EN ISO 10370* <i>*OptiDist can prepare the 10% bottom residue for EN ISO 10370</i>
Operation User Interface Heating System	Large graphic TFT-LCD color touch-screen with solvent-proof protection Low mass and low voltage, self-positioning heating system Unique Optimizer function for fully automatic initial heat settings and heating regulation; detectors for heater plate, vapor probe and centering device Temperature range from 0 to 65°C (32 to 149°F); programmable constant temperature, temperature ramping or special temperature profile; instantaneously ready at switch on
Condenser System	Temperature range from 0 to 40°C (32 to 104°F); corrosion proof design; programmable temperature or automatic adjustment to sample charge temperature; compatible with 100ml and 200ml receiver cylinders
Receiving Chamber	Temperature range from 0 to 40°C (32 to 104°F); corrosion proof design; programmable temperature or automatic adjustment to sample charge temperature; compatible with 100ml and 200ml receiver cylinders
Measurements Vapor Temperature	Range: 0 to 450°C (32 to 842°F), accuracy Pt 100 IEC 751 probe Class A Built in calibration memory with 10 point calibration table and automatic probe ID detection; calibration history; optional calibration certificate
Sample Volume	Optical measuring system compatible with samples producing smoke in the receiver; range 0 to 103% charge volume; resolution: 0.03ml, accuracy: ± 0.1ml Built-in pressure sensor, range to 70 to 110 kPa A (500 to 800 mmHg) Calibration: Single point against reference barometer
Ambient Pressure	Calibration: Single point against reference barometer
Safety	Built in fire extinguisher with 2 fire sensors
User Errors Prevention	Detector for heater base plate type, Detector for vapor probe and centering device Detectors for "receiver in place" and "receiver chamber door open" Detector for "condenser cleaned"
PAC IRIS Software features for OptiDist	<ul style="list-style-type: none"> • Run Control • Results • Calibration • Instrument Parameters • Reports • Quality Control • Method Definition • Specs Definition • Test Start • Results Evaluation
Connectivity	3 USB for external printer, barcode reader and memory stick; RS232C serial port for LIMS connection; Ethernet RJ45 port for LIMS connection and unit networking; Connection to external PC with PAC IRIS Software
Operating Requirements	Temperature 10 to 35°C (50 to 95°F); relative humidity up to 80% at 35°C (95°F) Multi Voltage 100 to 240V; 1400 W
Dimensions and Weight	44cm W * 57cm D * 65cm H (17,3" * 22,4" * 25,6"); 68kg (150lb)

HERZOG BY PAC

Herzog, originally established in 1937, is a long-established comprehensive line of laboratory instruments for testing distillation, flash point, vapor pressure, bitumen testing, cold flow properties, viscosity and other physical properties of materials.