



Acute Instruments

## Precision Automated Distillation Analyzer

### AutoDist-86(ver3.0)



#### STANDARDS :

- ASTM D86, IP 123, ISO 3405, JIS K2254
- ASTM D850
- ASTM D1078, IP195
- IS 1448 P:18

#### MAIN FEATURES:-

- ◆ Ready for Distillation Groups 0 – 4, Group Solvents
- ◆ Automated Temperature and Volume Calibration
- ◆ Automated Barometric Pressure, Residue and Loss Correction
- ◆ Automatic IBP, FBP and Dry Point detection
- ◆ Programmable Distillation Rate (2-15ml/min)
- ◆ Precision Level Follower System
- ◆ Powerful Peltier cooling and heating system
- ◆ SS condenser, Temperature Range 0-80 Deg C
- ◆ Receiver Chamber, Temperature Range 10-0 Deg C
- ◆ Low Voltage Sample Heating System
- ◆ User friendly Windows based software
- ◆ Automated Fire Extinguisher system with manual override

#### Basic Information about *AutoDist*

A Programmable fully automated micro controller based stand alone or PC operated Distillation Apparatus Model AutoDist with inbuilt **Peltier cooling system**, straight forward and user friendly windows based software. AutoDist is designed to perform automatic atmospheric pressure distillation analysis of gasolines, fuels, oils, solvents, aromatics, naphthas, kerosenes, hydrocarbons and other volatile products in accordance with the following standards • ASTM D86, ISO 3405, IP 123, JIS K2254 • ASTM D850 • ASTM D1078, IP 195 • IS 1448 P:18

#### TEST METHOD:

At atmospheric pressure, the sample is evaporated and condensed under controlled conditions, and observations are made of the temperatures at which various percentages recovered and/or recovered at various temperatures.

This distillations are used to characterize the tendency of a hydrocarbon fuel to vaporize.

Vaporization characteristics are a critical measure of overall fuel safety and performance.

#### ASTM D86 (IP123, ISO3405, JIS K2254) :

Group 0,1,2,3, Distillation of hydrocarbon upto 300°C FBP, e.g. all type of petrol, aviation, turbine fuel etc.

Group 4, Distillation of diesel fuel, gasoil, furnace oil, heavy product etc, upto 450 Deg C FBP

#### ASTM D850:

Distillation of industrial aromatic liquids.

#### ASTM D1078(IP195):

Group Solvents, Distillation of volatile organic liquids.

## Software Features

### PARAMETERS:

Displays on line parameters like Temperatures (Vapor, Receiver, Condenser & Heater) Heat % , Distillation Rate, Barometric Pressure, Receiver Volume and Distillation time during the distillation run.

**Graph:** Displays Vapor temp., Heat % and rate curve against receiver volume.

**Data:** Volume, Heat %, Flask Temp., Receiver Volume and Distillation Rate will be displayed for each second.

**Result:** Detail data of distillation run (Method, Final result, Dist data).

### RESULT:

Display detail method parameters, Volume against selected Temperatures and Displays Distillation data for every 0.1 ml (recovered, corrected, Loss corrected temp., Dist. Rate and heat %)

### Final Result:

All important values like IBP, FBP, Dry Point, Recovery, Residue and loss with recorded and corrected values are shown online here.

Sample details, Initial temp, atmospheric pressure, First 5ml and Last 5 ml time will also be displayed.

Cetane Index calculation against density input.

### Result Selection:

Shows current and previous results of Distillation which can be filtered by anyone of the following i.e. Sample Name, Sample ID, Operator, Method or Date.

## TECHNICAL SPECIFICATIONS

<b>Model</b>	◆ AutoDist-86(Ver:3.0)
Methods	◆ ASTM D86 (IP123,ISO3405, JIS K2254),ASTM D850, ASTM D1078 (IP195), ASTM D189, IS 1448 (P:18)
User Interface	◆ Standalone Unit with Built In PC, 12" Touch Screen LCD Display◆USB,RS232,Ethernet Port◆Bar code Reader ◆Thermal Printer ◆ Windows based user friendly software. ◆ User levels : Admin/Manager/Supervisor/Operator
<b>Systems</b>	
Heating system	◆ Low voltage heating system. ◆ The efficient spiral design concentrates the heat on to the bottom of the flask through the CERAN plate. This element is designed to last for a very long time. ◆ Automatic Forced Air Cooling after completion of test ◆ Automatic lowering of heater at the end of test ◆ Message for missing / improper placement of vapor sensor, centering device & flask. ◆ Message for wrong Flask Support Plate
Condenser system	◆ Programmable Temperature range from 0 to 80°C. ◆ The distillate is cooled by Peltier Devices fixed on condenser pipe made of seamless stainless steel tube. ◆ Error message if condenser not cleaned.
Receiving Chamber	◆ Programmable Temperature range from 10 to 50 °C ◆ Corrosion proof design. ◆ Alarm triggered if receiver temp exceeds 50 °C / door open / zero level error / improper cylinder placement / cylinder missing / drop reflector missing. ◆ Measurement of Charged Volume and Normalised to 100%. ◆ Automatic residue and loss calculation◆VOC Emission
Cooling system	◆ CFC free Peltier Cooling system. ◆ Safety interlocks for Peltier Heat Sink Temperature;
Manual system	◆ AutoDist having the provision to distill in manual mode as well. ◆ During distillation facility to change heat %.
<b>Measurements</b>	
Auto Calibration	◆ Prior to every distillation run, auto temperature and volume calibration will be performed without the use of any calibration device.
Vapor Temperature	◆ Range: 0 to 450 °C◆ Accuracy: PT 100 probe Class A. ◆ Resolution: 0.01 °C
Sample Volume	◆ Optical measuring system. ◆ Range: 0 to 103% of charge volume. ◆ Accuracy: +/- 0.1ml ◆ Resolution: 0.01 ml. ◆ 100ml/200ml .
Distillation Rate	◆ 2 to 15 ml/min, programmable
Dry Point	◆ In built dry point detection board. ◆ Thermocouple sensor for Dry Point detection.
Ambient Pressure	◆ Automatic Barometric pressure correction with built in pressure sensor. ◆ Range: 500 to 900 mm Hg). ◆Accuracy: : +/-0.1mmHg ◆ Calibration: Single point against reference barometer.
Cond. Bath Temp.	◆ Range: 0 to 80. °C◆ Accuracy: ± 0.1°C. ◆ with Ramping during Distillation
Rec. Chamber Temp.	◆ Range: 10 to 40 °C◆ Accuracy: ± 0.1 °C◆ with Ramping during Distillation
Heater Temp.	◆ Range: 0 to 800 °C. ◆ Accuracy: ± 0.5 °C.
Safety	◆ Built in fire extinguisher system. ◆ Upon detection of fire by IR sensor, warning buzzer will beep, power will cut off and the fire extinguisher system will be activated.◆ Interlock for Fire Extinguisher Pressure ◆ Safety switch for manual override.
Operating Requir.	◆ Temperature : 10 to 35 °C. ◆ Power Supply : 230 VAC 50 Hz 1400 watts. ◆ Housing : W :480mm D :590mm H :690mm Wt: 80Kg.

Manufactured by :



# Acute Instruments Pvt. Ltd.

31, 33 & 35, Ground Floor, Sai Chambers, Sector-11, CBD Belapur, Navi Mumbai-400 614. Maharashtra, India. Tel: +91 22 49709780 ; 49629780 | Mob. : 8422979781; 8422979782

Email: sales@acuteinstruments.com, info@acuteinstruments.com, www.acuteinstruments.net