

Distillation Analyzer

Diana Series



Reliable Atmospheric Distillation across Your Applications

From routine fuel testing to automated solvent analysis, the Diana series delivers standards-compliant boiling-range determination for petroleum and petrochemical laboratories. Achieve accurate, reproducible results with the level of automation that best suits your workflow.



Fuel testing: Confident routine quality control

Diana 301 and Diana 701 perform atmospheric distillation of fuels such as gasoline, jet fuel, and diesel according to international standard test methods. Reliable vapor temperature and volume measurement, robust instrument design, and intuitive workflows enable efficient, reproducible testing.



ASTM D86
EN ISO 3405
IP 123
JIS K 2254
GOST 2177



Solvent testing: Flexible automation for a wider application range

Diana 701 extends boiling-range determination to solvents and related products, including methanol, toluene, and ethylene glycol. Its fully automatic workflow reduces manual effort while enabling precise analysis according to established solvent distillation methods.



ASTM D850
ASTM D1078
IP 195

Standards-compliant automated distillation

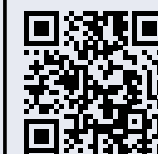
Efficient replacement for manual distillation

Break-resistant vapor temperature sensor

Long-life heater: >10,000 heating cycles

Fast method changes in <5 min

Guided, safe, error-free test setup



Find out more



Perfection from the First Drop

Robust engineering,
intelligent automation,
and safe operation for
reliable daily distillation.



Unique, robust metal sensor with glass-level performance

Diana's next-generation metal vapor temperature sensor reduces the risk of breakage, helping protect operators while improving uptime and reducing replacement costs.

Multi-plug for convenient sensor handling

The vapor temperature sensor and flask holder are combined in a compact multi-plug for cordless, convenient test setup. Integrated sensor memory stores identification and calibration data, enabling automatic recognition and traceable sensor exchange without recalibration.

Robust heating and stable volume detection

The long-life heater supports intensive daily operation, while the contamination-resistant receiving chamber combines optical volume detection without any moving parts and anti-condensation technology for stable measurement performance and long-term reliability, even in humid environments.

Liquid-free Peltier cooling

Liquid-free Peltier cooling rapidly adjusts condenser and receiving chamber temperatures between distillation groups, minimizing idle time and supporting high laboratory throughput.

Condition monitoring and integrated safety

Multiple sensors help prevent setup errors by recognizing key components such as the vapor temperature sensor, flask size, and support board. Guided workflows lead users step by step through the process, while integrated fire protection provides additional safety during operation.

Connected workflows and traceable data

Customizable data export and connectivity with AP Connect and LIMS reduce manual data transfer while supporting traceability, audit compliance, and efficient documentation.

Diana 701

High-Throughput Fuel and Solvent Testing

Diana 701 delivers fully automatic boiling-range determination according to major international distillation standards. It reduces manual effort and accelerates sample handling while maintaining reliable, reproducible operation in demanding laboratory workflows.

- **Full compliance with ASTM D86, D1078, D850, EN ISO 3405, and more**
- Next-generation, break-resistant metal vapor temperature sensor
- Multi-plug with integrated sensor memory for convenient handling
- Automatic heater and protective shield lift
- Liquid-free Peltier cooling for method changes in <5 min
- Automatic volume scanning and loss calculation
- Advanced condition monitoring for error-free and safe test setup
- Guided test setup and status light
- Extensive connectivity and data handling options



Diana 301

Efficient Routine Fuel Testing

Diana 301 provides standards-compliant boiling-range determination for routine fuel testing with a more hands-on approach. Familiar handling, robust components, and essential safety monitoring ensure reliable, reproducible results at an attractive price point.

- **Full compliance with ASTM D86 and EN ISO 3405**
- Reliable glass Pt100 vapor temperature sensor
- Assisted, preprogrammed heater control
- Liquid-free Peltier cooling for method changes in <5 min
- Familiar handling for straightforward routine operation
- Built-in safety monitoring for secure test setup
- Standards-compliant data export and AP Connect compatibility



Proven Excellence in ASTM PTP Trials

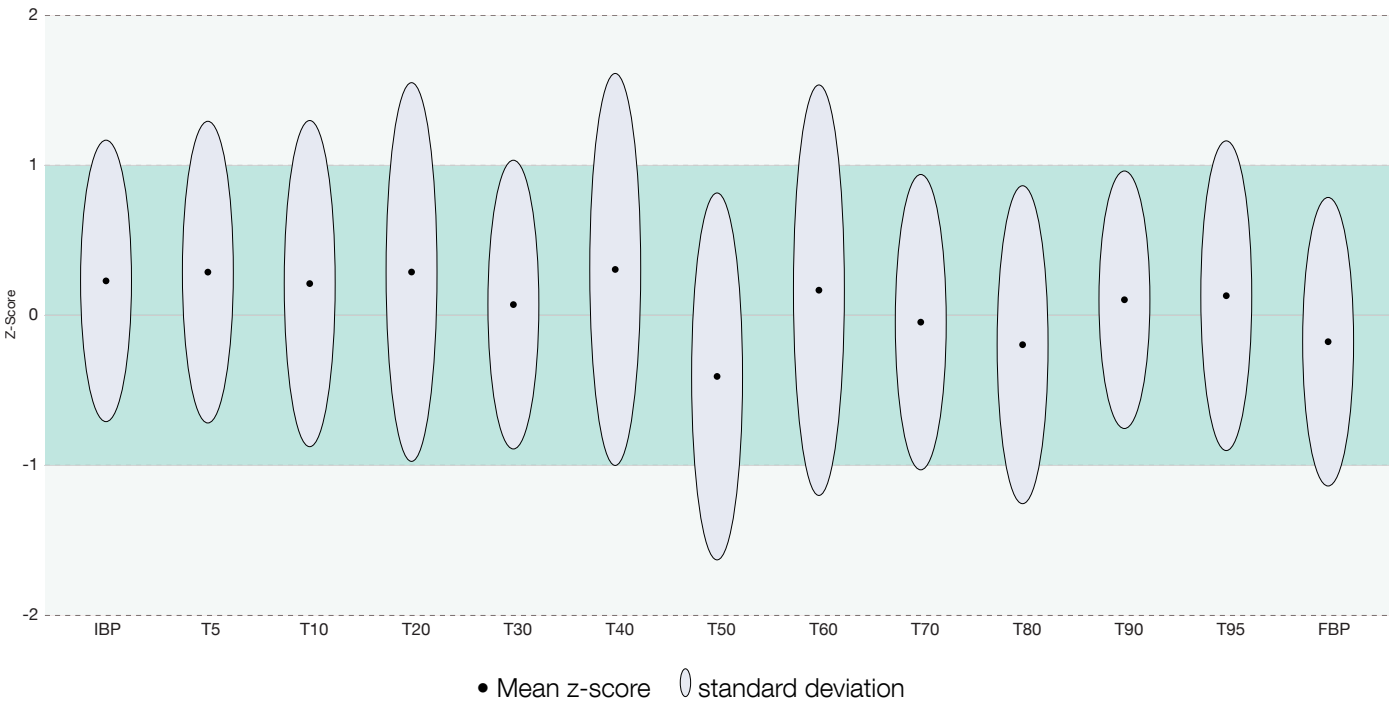
The high measurement performance of the Diana series has been validated in extensive testing under realistic laboratory conditions.

Eight ASTM proficiency testing samples covering motor gasoline, reformulated gasoline, jet fuel, and diesel fuel were analyzed on 10 instruments by five analysts.

Each sample was measured in duplicate, resulting in 160 distillation analyses and 2,080 individual ASTM D86 distillation-point results. Performance was then evaluated against the ASTM PTP consensus values using z-scores.

A total of 99 % of all distillation-point results met the accepted proficiency testing criterion of $|z| \leq 2$. In addition, over 98 % of duplicate pairs fulfilled the applicable repeatability criterion.

Measurement Performance



**Reliable
results**

Test results using the Diana series exhibited excellent agreement with ASTM PTP consensus values and strong repeatability across all evaluated samples, confirming accurate and precise ASTM D86 performance under routine laboratory conditions.

**Explore more
application
reports**

Find full details of this study and further application reports on renewable fuels, gasoline or diesel mixtures, immersion cooling fluids, rolling oils, and more on our website.

Your Distillation Data at a Glance

The Diana series is fully compatible with our lab execution software AP Connect, bringing distillation results into a centralized digital laboratory environment. Distillation curves and result values can be visualized and reviewed for convenient evaluation, comparison, and documentation.

Distillation results data is transferred in established industry notation format, including T50, E70, and R250, making key results immediately recognizable and easy to work with.

Together with the AP Connect CSV Configurator, the Diana series provides maximum control over how distillation results data are structured and exported to a LIMS, reducing manual data handling and supporting traceable digital workflows.



Data at Your Fingertips



AP Connect streamlines instrument data workflows in laboratories by providing seamless, efficient data management and integration for instruments. This ensures accuracy, data safety, compliance, and paperless efficiency in a centralized digital hub, which in turn helps improve data quality and reduces overhead costs.

	Diana 701	Diana 301
Standard test methods		
Fuel distillation	ASTM D86 (groups 0 to 4), EN ISO 3405 (groups 0 to 4), IP 123, JIS K 2254, GOST 2177	
Solvent distillation	ASTM D1078, ASTM D850, IP 195, JIS K 0066	-
Additional methods	ASTM D524, ASTM D4530, Benzinum Medicinale	-
Measurement		
Vapor temperature sensor	Pt100, metal or glass, Class A (DIN EN 60751)	Pt100, glass, Class A (DIN EN 60751)
Vapor temperature range	0 °C to 450 °C	
Vapor temperature calibration	Integrated sensor memory for up to 12 calibration points; automatic sensor ID detection	Up to three calibration points stored on the instrument
Distillation rate	Up to 10 mL/min, programmable	
Volume measurement	Optical static detection system with contact image sensor (CIS) and anti-condensation technology; ±0.1 mL accuracy	
Ambient pressure	Built-in pressure sensor (range: 30 kPa to 110 kPa) with single-point calibration against an external barometer	
Temperature control		
Heating system	Low-mass, low-voltage heating system with stabilized heating coil	
Initial heating control	Automatic	Assisted
Condenser and receiving chamber	Liquid-free Peltier (range: 0 °C to 80 °C; accuracy: ±0.5 °C at 25 °C)	
Operation and safety		
Guided mode and status light	Yes	-
Volume scanning and calculations	Initial and residue scan with automatic loss calculation; cetane and drivability index	-
Condition monitoring	Advanced setup and safety monitoring, including flask size, support board, vapor temperature sensor, heater shield and lift, condenser cleaning status, receiving chamber door, receiving cylinder, drip plate, and extinguisher gas connection	Essential safety monitoring, including vapor temperature sensor, receiving chamber door, receiving cylinder, and drip plate
Heater handling	Automatic heater and shield lift with cooling fan	Manual heater and shield lift
Fire safety	Built-in IR fire detection and fire extinguisher using N ₂ or CO ₂	
Data and connectivity		
Stored test results	>4,000	200
User-defined test methods	>200	15
Connectivity	AP Connect, LIMS, network share, email	AP Connect
Technical data		
Operating temperature	10 °C to 35 °C	
Power supply	AC 100 to 240 V, 50/60 Hz, 900 VA	
Dimensions (W × D × H) and weight	406 mm × 525 mm × 645 mm; 40 kg	
Communication interfaces	Ethernet, 4 × USB, Wi-Fi	Ethernet, 2 × USB
Dry-point detection	Optional sensor for 125 mL and 200 mL flasks	-

One Portfolio for All Your Needs

Laboratory Measurement & Characterization Solutions

- Density & Concentration Measurement
- Mechanical Surface Characterization
- Microwave Digestion & Synthesis
- Multiparameter Measurement
- Particle & Surface Charge Analysis
- Raman & FTIR Spectroscopy
- Refractometry & Polarimetry
- Surface Area & Pore Analysis
- Texture Analysis & Extrusion
- Thermal Analysis
- Viscometry & Rheometry
- Volatility & Consistency Analysis

Process Measurement Solutions

- Flow Measurement (Coriolis)
- Inline Beverage Analysis
- Process Measurement

Workflow & Automation Solutions

- Fully Automated Lab Solutions
- Software Solutions



Your trusted partner across the full lifecycle of your instrument

- 🔄 Consistent performance
- 📅 Maximum uptime
- 🛡️ Audit-ready compliance
- 🚀 Fast local support



