



solid partners  
proven solutions



**Advanced Analytical  
Instrumentation for  
Lab Applications**

[www.pacip.com](http://www.pacip.com)

# Company Overview

PAC is a leading global manufacturer of advanced analytical instruments for laboratories and online process applications in industries such as petrochemical, refinery, upstream, biofuels, environmental, food & beverage, lubricants, automotive and pharmaceutical.

With a product portfolio of over 200 testing instruments, PAC serves its customers with cutting-edge technology and significant research and development resources to support its core technologies: chromatography, elemental analysis, physical properties, fuels composition, and laboratory automation.

Our corporate strength is built upon the quality of our product lines, our powerful technology team, and our commitment to customer support.

We're an industry leader in standards development, and we work tirelessly to establish benchmark procedures that scientists and analysts around the world rely on every day to build better products and a cleaner environment.

PAC operates as a unit of Roper Technologies, Inc., a diversified technology company and a constituent of S&P 500, Fortune 1000, and Russell 1000 indices.

*The most respected and long-established brands of analytical equipment in one single organization*

## Product Lines

PAC has combined the world's most respected and long-established brands of analytical and testing equipment into a single manufacturing, marketing and service organization. Each of our brands have long histories of developing best-in-class analytical instrumentation for lab and process applications. In fact, the dynamic synergy of the PAC team and its unique technologies has led to the development of unique, cutting-edge instruments.

In close cooperation with various standards organizations throughout the world, PAC introduces innovative instruments & applications which adhere to various standards by ASTM, CEN, DIN, GPA, IP, ISO, and UOP. PAC also complies with ISO 9001-2015 standards.



# Services, Support & Training

Our individualized instrument service programs help our customers ensure maximum quality and repeatability, while complying with standards and regulatory requirements.

In addition to service programs, we also offer individual services for preventative maintenance, calibration, and relocation services. Our Service Repair Centers, located around the world, are ISO-9001 accredited. All work is performed by skilled certified service technicians.

PAC offers a wide selection of training and educational programs to support our customers throughout the range of industries that our instruments serve.

Our training programs may take place in one of our PAC facilities worldwide or right at the customer's facility. We also offer webinars of some of our key technologies online.



## Iris Software

An advanced, laboratory results management and reporting software system developed by PAC. The Iris Software provides customers the advantage of connecting their laboratory instruments, locally or worldwide, and managing these instruments from a single computer. This greatly improves laboratory efficiency, which reduces the amount of training needed when working with multiple software platforms. In addition, it can perform data reprocessing without rerunning a sample, which increases laboratory productivity. IRIS Software is also compliant with security and quality protocols.



## Certified Reference Materials

PAC offers a broad range of Certified Reference Materials (CRM), calibration standards and reference samples to support your testing needs. By routinely verifying your instrument's performance, you can ensure consistent quality that meets expected performance demands. This will help you establish good inter-laboratory correlation and generate reliable test data.

### Benefits:

- Ensures dependable performance of your equipment
- Isolates testing bias before it impacts product quality
- Certified values determined through International round robin testing by a minimum of 12 labs
- Meets traceability requirements for ISO/NAMAS accreditation

# Lab Instruments Overview



AC Hi-Speed Refinery Gas Analyzer



AC ACCURA



Reformulyzer M4

Category	Full Composition Analysis								Boiling Point Distribution	
Model	AC NGA	AC HiSpeed RGA AC FastRGA AC LPG	AC DHA Analyzers		AC Reformulyzer® M4	AC PIONA Prefrac M3	AC GCxGC PIPNA in Jet and Diesel Analyzer	AC MDA Analyzer (HPLC)	Productivity Center	
			Regular	AC DHA Front End					AC 8612™ Analyzer	AC8634™ Analyzer
Standard Method	D1945 ISO 6974 GPA 2261  Extended NGA: ISO 6975, ISO 6976, GPA 2172, GPA 2286, GOST 31371	D1946 , D2163, D2598, D3588, EN ISO 7941, IP 405, EN 15984, UOP 539, GOST 31371, GOST R 54484	AC Fast DHA D6729, D6730, D5134, D6733, GOST R 52714, GOST 54275	D7900, EN 15199-4, IP 601,	ISO 22854, D6839, D5443, IP 566, SH/T 0741, GB/T 28768-2012, GOST R EN ISO 22854	D5443	UOP 990	D6591, EN 12916, IP 391, GOST R EN 12916, D6379, IP548, IP436	D86 equivalent for groups 0, 1 and 2  GOST 2177	D86 equivalent for groups 3 and 4 , D2887, EN ISO 3924, IP 406, GOST 2177
Application	<b>NGA:</b> C1-C6, C6+ hydro carbons, Hydrogen sulfide <b>Extended NGA:</b> C1-C14, C14+ hydrocarbons, Non-condensable gases: nitrogen, carbon dioxide and oxygen, hydrogen sulfide	Non-condensable Gases, C1-C5, C5+ hydro carbons	C1 - nC14 ethanol, Butanol, MTBE/ETBE/TAME, methanol, t-Butanol	Light Hydrocarbons in Crude						
Refinery Gas		•								
Natural Gas	•									
Biogas	•									
LPG		•								
Gas in Petrochemical		•								
Straight Run/ Naphtha			•	•	•				•	
Depentanized Bottom			•	•	•				•	
Reformate			•	•	•				•	
FCC-Light			•	•	•				•	
FCC-Middle					•					
FCC-Heavy					•					
Visbreaker			•	•	•				•	
Alkylate			•	•	•				•	
Isomate			•	•	•				•	
Gasoline Blend			•	•	•				•	
Gasoline with Oxygenates			•	•	•				•	
Jet Fuel							•	•		•
Diesel							•	•		•
Micro Activity Testing						•				
Lubricant (stock base) with and without Oxygenates										
Thermal Crack Feed										
Crude Oil				•						
Residue										
Biofuels							•	•		



# Lab Instruments Overview

## PHYSICAL PROPERTIES



Category	Distillation				Cold Behavior			Vapor Pressure
Description	Atmospheric Pressure Distillation	Atmospheric Micro-distillation	Vacuum Distillation	Atmospheric Pressure Distillation	Automatic Cloud & Pour Point Analyzer	Automatic Cold Filter Plugging Point Analyzer	Automatic Cloud & Pour Point Analyzer (mini method)	Automatic Vapor Pressure Analyzer
Model	Herzog Optidist	ISL PMD 110	Herzog HDV 632	Herzog HDA 620	ISL OptiCPP	ISL OptiFPP	ISL OptiMPP	Herzog HVP 972
Standard Method	D86, D1078, D850, IP 123, IP 195, ISO 3405, EN 3405, GOST 2177, GB/T6536	D7345, GOST 2177, GOST 11011, Correlates to: D86, D1160 (FAME)	D1160, GOST 11011	ASTM D86, D850, D1078, DIN 51 751, IP 123, IP 191, IP 195, ISO 3405	D2500, D5771, D5853, D5950, D97, IP 15, IP 219, IP 444, ISO 3015, ISO 3016, JIS K2269	EN 16329, EN 116, D6371, IP 309, JIS K2288, GOST 22254, SH/T 0248	D7346-14, D768911, Correlates to: D97, D2500, ISO 3015, ISO 3016, JIS K2269	D5191, D6378, EN 13016, IP 394
Applications	Atmospheric Distillation	Atmospheric Distillation	Vacuum Distillation	Atmospheric Distillation	Cloud Point, Pour Point	Cold Filter Plugging Point	Cloud Point, Pour Point	Vapor Pressure



Category	Flash Point							
Description	Automatic Pensky Martens Flash Point Tester	Automatic TAG Closed Cup Flash Point Tester	Automatic ABEL Closed Cup Flash Point Tester	Automatic Small Scale Flash Point Tester	Automatic Cleveland Flash Point Tester	Semi-Automatic Pensky-Martens Flash Point Tester	Semi-Automatic TAG Closed Cup Flash Point Tester	Semi-Automatic Abel Closed Cup Flash Point Tester
Model	OptiFlash Pensky Martens	OptiFlash TAG	OptiFlash ABEL	OptiFlash Small Scale	OptiFlash CoC	Herzog HFP 380	Herzog HFP 382	Herzog HFP 384
Standard Method	D93, EN ISO 2719, IP 34, ISO 2719, JIS K2265, GB/T 261, GOST R EN ISO 2719	ASTM D56	EN ISO 13736, IP 170	ASTM D3828, ASTM D3278, ASTM D7236, ISO 3679, ISO 3680, IP523, IP524, IP534	D92, ISO 2592, GOST 4333	ASTM D93, IP 34, DIN 51758, EN 2719, GOST R EN ISO 2719	D56, GOST R 53717	ISO 13736, GOST R EN ISO13736
Applications	Flash Point Pensky-Martens	Flash Point TAG Cup	Flash Point Abel Cup	Flash Point Small Scale	Flash Point Cleveland Open Cup	Flash Point Pensky-Martens	Flash Point TAG Cup	Flash Point Abel Cup



Category	Cetane	Density	Others				
Description	Automatic Derived Cetane Number Analyzer	Automated Digital Density Meter	Micro Carbon Residue Tester	Noack Evaporation Loss Tester	Automatic Ring and Ball Tester	Automatic Ring and Ball Tester	Gum Test
Model	Herzog Cetane ID 510	ISL VIDA	Alcor MCRT 160	ISL NCK 2 5G	ISL RB 36 5G	Herzog HRB 754	Herzog HGT 915, HGT 917
Standard Method	Approved: ASTM D7668, EN 16715, IP 615 Correlates: ASTM D613, ISO 5165, IP 41, EN 16715, IP 615 Diesel specs: ASTM D975, D6751 and D7467, EN 590	D4052, D5002, IP 365, ISO 12185, DIN 51757, SH/0604	D189, D4530, DIN 51551, GB/T 17144, IP 398, ISO 10370, ISO 6615, JIS K2270; GB/T 17144	D5800, CEC L 40 A 93, IP 421	D36, E28, EN 1427, IP 58, ISO 4625	D36, E28, EN 1427, IP 58, ISO 4625	D381, EN 5, IP 131, IP 540, ISO 6246
Applications	Combustion Cetane	Density	Carbon Residue	Evaporation Loss	Bitumen Ring & Ball	Bitumen Ring & Ball	Gum Content

## FUEL ANALYSIS



<b>Description</b>	Jet Fuel Thermal Oxidation Tester	Ellipsometric jet fuel thermal oxidation heater tube scanner	Automatic Freezing Point Analyzer	FTIR Analyzer for Gasoline, Diesel & Jet Fuel	Ethanol Purity/Ethanol in Gasoline	Diesel Fuel Dye Marker & ASTM Color
<b>Model</b>	Alcor JFTOT IV	OptiReader	ISL OptiFZP	OptiFuel	PetroSpec QuickSpec™	PetroSpec DT 100
<b>Standard Method</b>	D3241, IP 323, ISO 6249	D3241 Annex 4	D7153, MIL-DTL-5624V Correlates to: D2386, IP 16, IP 529, ISO 3013, JIS K2276	ASTM D6277, ASTM D7371, ASTM D5845, ASTM D7777, IP 559, EN 238	D4806	
<b>Applications</b>	Thermal Oxidation JFTOT	Heater tube scanning	Freezing Point	Fuel analysis	Ethanol Purity	Color and Haze

## VISCOSITY MEASUREMENT



<b>Description</b>	Temperature Controlled Viscometer	Small Sample Viscometer	Micro Sample Viscometer	High Pressure Viscometer	Multirange Viscometer	HVU Series Automated Viscometers	Viscometer Houillon	Manual Viscometer Bath
<b>Model</b>	CVI VISCOlab 3000	CVI VISCOlab 4000	CVI VISCOlab 5000	CVI VISCOlab PVT	Herzog HVM 472	Herzog HVU 481, HVU482	ISL VH1, VH2	ISL TVB 445
<b>Standard Method</b>	D7483	D7483	D7483	D7483	D445, D446, IP 71, ISO 3104, EN ISO 3104, ISO 3105, GOST 33, GB/T 265	D445, D446, DIN 51562, IP 71, ISO 3104, EN ISO 3104, ISO 3105, GOST 33, GB/T 265	D7279	D445, D446, DIN 51562, IP 71, ISO 3104, EN ISO 3104, ISO 3105, GOST 33, GB/T 265
<b>Applications</b>	Absolute Viscosity	Absolute Viscosity	Absolute Viscosity	Absolute Viscosity	Viscosity	Viscosity	Viscosity	Viscosity

## ELEMENTAL ANALYSIS



<b>Category</b>	Configurations			
<b>Detection</b>	Nitrogen	Sulfur	Nitrogen + Sulfur	Halides
<b>Measurement Principle</b>	Chemiluminescence	Ultra-Violet Fluorescence	Combination of Chemiluminescence and Ultra-Violet Fluorescence	Ion Chromatography separation with conductivity detection
<b>Standard Methods</b>	ASTM D4629, ASTM D5176, ASTM D5762, ASTM D7184, DIN 51444, ISO/TR 11905, GB/T 17674, SHT 0657, UOP 936, EN 12260	ASTM D5453, EN-ISO 20846, ASTM D6667, ASTM D7183, ASTM D7551, EN 15486, JIS K 2541, SHT 0689 IP 490		ASTM D7359, ASTM D7994
<b>Applications</b>	Quantitative analysis of Nitrogen in: Gasoline, Diesel, Biodiesel, LPG's, Aromatics, Jet Fuels, Heavy Oils, water, Polymers, Food, Pharma and Soils.	Quantitative analysis of Sulfur in: Gasoline, Diesel, Biodiesel, LPG's, Aromatics, Jet Fuels, Heavy Oils, water, Polymers, Food, Pharma and Soils.	Quantitative analysis of Nitrogen and Sulfur in one run: Gasoline, Diesel, Biodiesel, LPG's, Aromatics, Jet Fuels, Heavy Oils, water, Polymers, Food, Pharma and Soils.	Analysis of halides (F, Cl, Br, I) in gas, Liquid or solid hydrocarbon and non-hydrocarbon samples

All our instruments can be customized to your specific needs.  
Due to continuing product development, specifications are subject to change at any time without notice.



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