

PetraMax

EDXRF Elemental Analysis System

ASTM D4294, ASTM D8252, ISO 8754

Petra MAX delivers D4294 sulfur analysis in addition to 12 elements from P to Zn, for rapid monitoring of critical elements like Ca, Fe, K, Ni, and V at sub-ppm levels. Petra MAX offers advanced precision with HDXRF, advanced reliability, and advanced software and data management. Petroleum laboratories depend on reliable, robust analytical solutions for their fast-paced environment. Petra MAX was designed to meet these needs with an innovative sample introduction system that directs accidental spills to a drip tray and away from valuable components.

Petra MAX Autosampler offers a more efficient workflow with sample tracking and continuous sample loading. Users can eliminate data errors and add urgent samples to the queue as needed.

The Autosampler Upgrade Kit can be added to any Petra Series analyzer. Users have the option to use X-ID Sample Cups (QR-coded) or standard XRF cups.

The blending of crude oils from different sources has become more commonplace within the industry to meet specifications for the classification of sweet crude oil. The introduction of new crudes brings new challenges, like higher concentrations of metals such as nickel (Ni), vanadium (V), and iron (Fe). Ni and V are known to rapidly deactivate process catalysts in the catalytic cracker (FCC) and hydrotreaters. In response, many refiners have incorporated Ni and V analysis into their routine crude assay, and pipelines have set specifications for Ni and V in their common stream sweet crude. Fe is introduced into crude oil from corrosion byproducts during transportation and can lead to pump and exchanger fouling, and off-specification coke. The data in Table 1 represents ten separate aliquots of crude oil that were analyzed for 300 seconds by Petra MAX to demonstrate the advanced precision achievable with HDXRF® technology.



Specifications

Dynamic Range	Sulfur 5.7 ppm – 10 wt%					
Limit of Detection (ppm @ 600 s) in hydrocarbons	P	Cl	K	Ca	V	Cr
	17	3	0.7	0.4	0.1	0.09
	Mn	Fe	Co	Ni	Cu	Zn
	0.07	0.07	0.07	0.04	0.1	0.1
Measurement Time	30-900 seconds					
Calibration	30 calibration curves					
Sample Cup Volume	7 mL					
Data Output	Printout, USB, and Ethernet to PC connection					
I/O Ports	Ethernet 10/100, USB					
Power Supply	110-240 VAC ± 10%, 50-60 Hz (hertz)					
Operating Temperature	+41°F to 104°F (5°C to 40°C)					
Operating Humidity	30 – 85 %					
Weight	33 lbs (15 kg)					
Dimensions	16.5 in W x 16.5 in L x 21 in H (41.9 cm W x 41.9 cm L x 38.9 cm H)					
Applications	Hydrocarbons, water, and catalysts					

