

PO200 Oil Spectrometer



PRODUCT INTRODUCTION

The oil analysis spectrometer is a rotating graphite disk electrode oil analysis spectrometer developed based on the principle of atomic emission spectroscopy. It is mainly composed of a high-energy electric arc excitation power supply system, a rotating disc and rod electrode excitation device system, a Paschen-Runge full point surface diffraction optical system, a high-sensitivity CCD electronic measurement and control system, and a professionally developed computer analysis software system. It is specifically designed for the accurate quantitative determination of trace elements and their concentrations dissolved and suspended in various synthetic or mineral lubricating oils. It is widely used in fields such as the military, aviation, marine, land transportation, mining, power plants, and commercial oil testing laboratories. It is suitable for elemental analysis of various new or reused lubricating oils, hydraulic oils, light fuel oils (gasoline and diesel), heavy oils, lubricating greases, antifreeze, industrial domestic water, and condensate for steam turbine flushing.

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MAIN FEATURES

- The detection methods and precision meet the standards of ASTM D6595, ASTM D6728NB/SH/T0865-2023, and HB20094.1-2012.
- Patented digital arc light source, solid-state excitation, ensures constant current source frequency output, no need for periodic cleaning or error in excitation source cleaning.
- Equipped with a high-resolution solid-state CCD sensor optical system, with individual pixels of 3648 bits, pixel size of 8*200um, higher pixel count allows for the detection of more effective spectral intensities.
- Based on the Windows operating system, the spectral analysis software can run on systems such as Windows 7 and Windows 10, integrating instrument control, data management, and qualitative and quantitative analysis functions.
- A single-station instrument with a computer system and motor grinder built-in, the instrument has a compact size, facilitating transportation.
- Short warm-up time, high reliability, suitable for shipboard environments.
- No need for argon, oxygen, or other chemical solvents; oil samples do not require pre-treatment and can be tested directly by placing them in the sample cup.
- Built-in printer; built-in electrode grinder, convenient for operation.

PERFORMANCE INDEX

1. Meets ASTM D6595, ASTM D6728 standards, NB/SH/T0865, HB20094.1-2012;
2. Capable of synchronous analysis of 24 elements (Al, Ba, B, Ca, Cd, Cr, Cu, Pb, Mg, Mn, Mo, Ni, P, Si, Ag, Na, Sn, Ti, V, Zn, Fe, K, Li, Sb), accurately determining the composition of wear elements, contamination elements, and additive elements in oil samples;
3. Detection range: 0-1000ppm (19 elements, Al, B, Cd, Cr, Cu, Pb, Mn, Mo, Ni, Si, Ag, Na, Sn, Ti, V, Fe, K, Li, Sb), 0-6000ppm (5 elements, Ba, Ca, Mg, P, Zn);
4. Employs a high-performance CCD optical system;
5. Dual optical systems, Rowland circle optics and C-T optical path;
6. Dual fiber optic light signal import;
7. No need for gas or other chemical reagents for auxiliary excitation, oil samples require no pre-treatment and can be tested directly by placing them in the sample cup;
8. Optical focal length: 500mm;
9. Spectral line range: 190-800nm;
10. Optical system temperature control: 38°C±0.1°C, effectively ensuring accuracy and stability;
11. Fast sample testing speed, single test time not exceeding 30 seconds;
12. High detection precision, detection limit less than 1ppm;
13. Sample volume: less than 2mL;
14. Built-in graphite electrode grinder;
15. Built-in printer (optional);
16. Integrated industrial control computer in one device, convenient for on-site use at any time;
17. The device has an exhaust structure to prevent cross-contamination;
18. Built-in self-developed spectral analysis expert system, with data management, trend analysis, and prediction functions, which can be used to analyze and judge the current working condition of equipment, and predict future working conditions, thus providing an effective basis for the correct use and maintenance of equipment.

TECHNICAL SPECIFICATIONS

Project	Data
Power Supply:	AC220V±10%, 50-60Hz
Ambient Temperature:	0°C~55°C
Test Time:	30S
Optical Structure:	Paschen-Runge structure, Rowland circle device
Optical Focal Length:	500mm
Spectral Line Range:	190~800 nm
Detector:	CCD
Detection Limit:	<1ppm
Size Dimensions:	660mm*360mm*520mm (Length * Width * Height)
★ Instrument Weight:	About 64 kg
Elements Detected:	Standard 24 elements, expandable up to 32 elements
Measurement Range:	0~6000ppm