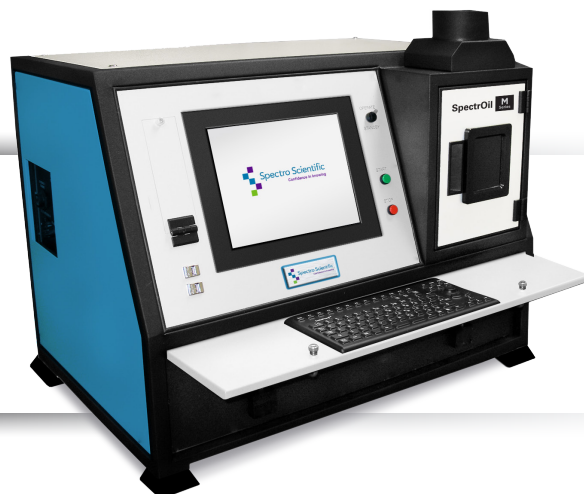


# SpectrOil M/F-W

## FUEL ANALYSIS SPECTROMETER

On site fuel analysis for gas turbines and diesel engines



### KEY APPLICATIONS

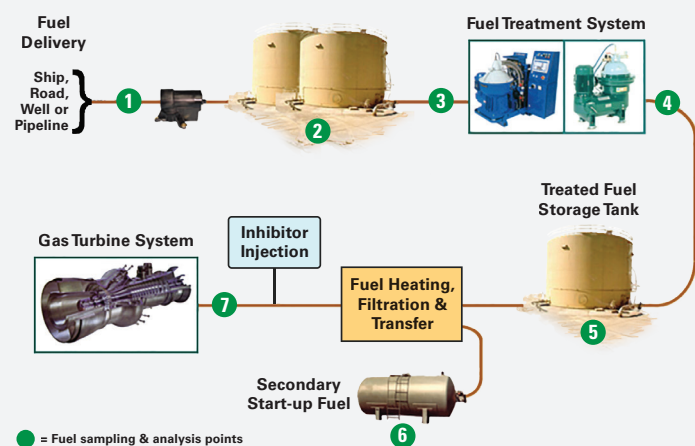
- Fuel quality analysis for liquid fired gas turbines and diesel engines of:
  - Electric power generation stations
  - Fuel treatment systems
  - Shipboard propulsion systems
- Qualification of fuel treatment system effectiveness
- Contaminant elements in turbine wash-down water can be checked with optional water calibration program

The SpectrOil M/F-W and M/F-LD are widely used to check ash-forming contaminant in fuels for gas turbines and diesel engines in power plants worldwide. It measures concentrations of contaminant elements and the information is used for incoming inspection, transportation and treatment of the fuel to prevent or reduce corrosion of the turbines blades. Using the proven rotating disc electrode (RDE) Optical Emission Spectroscopy (OES) technology, it produces accurate and repeatable results quickly without extensive training.

### SpectrOil M/F-W and M/F-LD Key Features:

- Rugged frame and optics system designed for remote operations
- Easy to operation for non-skilled operators
- No sample preparation
- 30 second analysis time
- Self-sustained with built-in industrial touch panel PC
- No special utilities or gases required, only AC power
- Sub ppm LOD for most critical elements
- Compliant to ASTM D6728
- Less than 100 ppb LOD for V and alkali metals for SpectrOil M/F-LD

### Typical Fuel Delivery Workflow Showing Common Sampling Points



When a fuel arrives on site, it has gone through production, storage, transport and storage. Few fuels are so clean after this cycle that they can be used without treatment. Analysis requirements start with the delivery of the fuel, continue throughout fuel handling, and end only as the fuel is injected into the turbine. Preconditioning of the fuel before it reaches the gas turbine is a prerequisite for installation when contamination may be present.

Spectrometric analysis determines the amount of treatment required and the efficiency of that treatment. In particular, sodium and potassium concentrations must be determined to well below one part per million in most fuels. In heavy fuels, the vanadium concentration is used to calculate the amount of magnesium treatment compound to be added to the fuel.

## Product Information

PRODUCT INFORMATION	
Part Numbers	Spectro-M/F-W (light fuel, heavy fuel) Spectro-M/F-LD (low detection diesel)
Output	mg/kg (ppm)
Calibration	Factory set, no re-calibration needed
HARDWARE SPECIFICATIONS	
Excitation Source	Oscillatory arc discharge
Optical system	Rowland Circle polychromator Optic. Temperature controlled at 40C +/- 1C
Spectral Range	203 nm to 810 nm
Detectors	CCD array
OPERATIONAL SPECIFICATIONS	
Sample Volume	2 ml of fluid
Ambient Operating Temperature	0 to 40C (32F to 104F)
Relative Humidity	0 to 90%, non-condensing
USER INTERFACE SPECIFICATIONS	
Operating System	Windows 7 Pro
PC and Display	Industrial touch panel PC, 12" display
Data Storage	Internal PC, USB, CD-RW
POWER REQUIREMENTS	
Voltage Input	AC 120/240V, 50/60Hz
Power Consumption	1000 Watts at test
MECHANICAL SPECIFICATIONS	
Dimensions	80 cm (L) x 63.5 cm (W) x 70 cm (H) (31.5 in x 25 in x 27 in)
Weights	114 kg (250 lbs)
Shipping Dimensions	102 cm (L) x 91 cm (W) x 94 cm (H) (40 in x 36 in x 37 in )
Shipping Weights	261 kg (575 lbs) M/N

## Consumables

Only use Spectro Scientific certified consumables for SpectroOil M/F-W and M/F-LD to ensure data integrity.

M97008	Graphite disc D-2 AGKSP 500/Box
M97009	Graphite rod .242x6" AGKSP Pkg/50
P-10524	High temperature sample cup (black)
M90204	Sample cover for low flash point fuels

## Calibration Programs and Standards

Light and heavy fuel (SpectroOil M/F-W)	CS-75-500	Base Oil
	CS-GT15-10	10 ppm for light fuel
	CS-GT15-100	100 ppm for heavy fuel
Low detection (LD) diesel (SpectroOil M/F-LD)	CS-HP-100	High purity base oil
	CS-GT15-10	10 ppm, 15 elements
	CS-GT15-100	100 ppm, 15 elements
	300-00010	1 ppm for Li, Na, K,V
	600-00111	0.2 ppm for V
Process water (optional)	STE006 KIT	DI water and 5 ppm standard

## Calibration Program and Elemental Ranges

Element	Light Fuel	Heavy Fuel	Fuel Low Detection	Water
Al	0 - 50	0 - 500	0 - 100	
Ca	0 - 50	0 - 500	0 - 100	0 - 5
Cr	0 - 50	0 - 500	0 - 100	
Cu	0 - 50	0 - 500	0 - 100	
Fe	0 - 50	0 - 500	0 - 100	0 - 5
K	0 - 50	0 - 500	0 - 100	0 - 5
Li	0 - 50	0 - 500	0 - 100	0 - 5
Mg	0 - 150	0 - 1,500	0 - 100	0 - 5
Mn	0 - 50	0 - 500	0 - 100	
Na	0 - 50	0 - 500	0 - 100	0 - 5
Ni	0 - 50	0 - 500	0 - 100	
Pb	0 - 50	0 - 500	0 - 100	
Si	0 - 50	0 - 500	0 - 100	0 - 5
V	0 - 50	0 - 500	0 - 100	
Zn	0 - 50	0 - 500	0 - 100	

