

# SC-144DR Series

## Sulfur/Carbon



The SC-144DR Sulfur and Carbon Analyzer is designed to determine the carbon and sulfur content in a wide variety of organic materials such as coal, coke, and oils, as well as some inorganic materials such as soil, cement, and limestone by combustion and non-dispersive infrared detection.

### How It Works

Analysis begins as a sample (0.350 g nominal) is weighed into a combustion boat. The sample within the combustion boat is placed in a pure oxygen environment typically regulated at 1350°C, then undergoes complete combustion, releasing the sample's carbon as carbon dioxide (CO<sub>2</sub>) gas and sulfur as sulfur dioxide (SO<sub>2</sub>). The sample's combustion gases are first swept through the boat stop to the back of the inner combustion tube, then forward between the inner and outer combustion tubes, allowing the combustion gases to remain in the high temperature zone for a longer period and permit efficient oxidation.

From the combustion system, the gases flow through two anhydrous tubes removing moisture, through a flow controller that sets the flow of the combustion gases through the infrared detection cell. The carbon IR cell measures the concentration of carbon dioxide gas. The sulfur IR cell measures the concentration of sulfur dioxide gas.

The SC-144DR is controlled by an external PC using Windows® - based operating software.



**IR Detection System**  
From ppm levels to high-percent concentrations of sulfur and/or carbon



**Sample Boats**  
Hold sample sizes up to 350 mg



**Combustion Tube**

- Combustion of sample in an oxygen-rich environment at ~1350°C
- Concentric design of combustion tube ensures complete oxidation of various matrices