

# 832 Series Sulfur/Carbon Determinator

## Specification Sheet



### Instrument Range\*

Sulfur, 832:	0.008** to 30 mg
Sulfur, 832DR and 832HT:	0.0035** to 98 mg
Carbon:	0.0175** to 200 mg

### Precision†

Sulfur, 832:	0.004 mg or 1% RSD, whichever is greater
Sulfur, 832DR and 832HT:	0.0018 mg or 1% RSD, whichever is greater
Carbon:	0.0088 mg or 1% RSD, whichever is greater

<b>Sample Mass</b>	350 mg (nominal, coal)
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<b>Analysis Time</b>	60 to 120 seconds nominal
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<b>Detection Method</b>	Non-Dispersive Infrared Absorption (NDIR)
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<b>Chemical Reagents</b>	Magnesium Perchlorate (Anhydrous)
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<b>Gas Requirements</b>	Oxygen, 99.5% purity, 15 psi (1.0 bar) ± 10%
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### Furnace, Resistance

Base 832 and 832DR:	800 °C to 1450 °C, ± 10 °C of setpoint
832HT:	800 °C to 1550 °C, ± 10 °C of setpoint

<b>Operating Conditions</b>	Temp: 15 to 35 °C (59 to 95 °F)      Rel. Humidity: 20 to 80%, non-condensing
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<b>Sound Pressure Level</b>	57 dBA (max reading at operator's level per IEC/EN 61010-1)
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<b>Physical Dimensions‡</b>	80 cm H x 46 cm W x 79 {66‡} cm D      31.5 in H x 18 in W x 31 {26‡} in D
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<b>Electrical Power</b>	230 V~ (+10%/-15% at max load); 50/60 Hz, Single Phase; 12A max, 4A idle§
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<b>Thermal Dissipation</b>	Idle: 3,100 Btu/hr§      Analyzing: 5,100 Btu/hr§§
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<b>Weight (approximate)</b>	194 lb (88 kg) Analyzer with Monitor      172 lb (78 kg) without Monitor
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### Part Numbers

SC832-MC	Sulfur/Carbon 832 instrument with Cornerstone brand software, external PC, and touch-screen display
SC832DR-MC	Dual Range Sulfur/Carbon 832 instrument with Cornerstone brand software, external PC, performance package, and touch-screen display
SC832HT-MC	High Temp Dual Range Sulfur/Carbon 832 instrument with Cornerstone brand software, external PC, performance package, and touch-screen display

### Options

Multiple configurations of options are available. Please contact your local LECO Sales Engineer for more details.

- Other Sulfur and/or Carbon configurations are available.
- Optional performance package (P); adds a segmented leak check and electronic back pressure flow control feature.
- Optional autoloader package (L); adds an autoloader with 100-sample capacity, see 832 Series Autoloader specification sheet for additional information (209-171-012).

\*Use the following formula to calculate element concentration:

% element concentration = ((absolute element mass in mg)/(sample mass in mg))\*100

\*\*Lower range is calculated as 2 σ instrument blank deviation. Method range may differ due to factors such as sample type and method parameters.

†Calculated as 1 σ instrument blank deviation. Method precision may differ due to sample inhomogeneity or other external factors.

‡Allow for a 6 inch (15 cm) minimum access area around the side of the instrument; space not required behind the instrument.

§Dimension from rear panel to front foot, reflects actual benchspace required.

§Average at standby: 1100 °C, gas off.

§§Average at nominal operating parameters: 1350 °C, gas on, 30 samples/hour.

The 832 Series of Elemental Determinators are specifically designed to determine the sulfur and carbon content in a wide variety of organic materials such as coal, coke and fuel oils, as well as some inorganic materials such as soils, cements and limestone by high temperature combustion with non-dispersive infrared detection (NDIR).

Non-dispersive infrared cells are based on the principle that CO<sub>2</sub> and SO<sub>2</sub> absorb infrared (IR) energy at unique wavelengths within the IR spectrum. Incident IR energy at these wavelengths is absorbed as the gases pass through IR absorption cells with the absorption being dependent upon the path length of the cell. The Dual Range (DR) sulfur 832 model has a wider sulfur range due to a short and long path length IR cells provided for measurement of high and low range sulfur signals. The software automatically selects which cell to use for optimum measurement in the 832DR model. The concentration of unknown samples is determined relative to calibration standards.

## Composite Flow Diagram



Specifications and part numbers may change.  
Consult LECO for latest information.

**LECO Corporation**

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