TGA801

Thermogravimetric Analyzer

Specification Sheet

Sample Mass	1 g (nominal)
Sample Capacity	19 (+1 reference)
Precision	0.02% RSD (1σ, 1 g inert sample)
Balance Resolution	0.0001 g
Temperature Control	100 °C to 1000 °C (212 °F to 1832 °F) Accuracy: 2% of setpoint, or ±2 °C; whichever is greater Stability: 2% of setpoint, or ±2 °C; whichever is greater
Minimum Starting Temperature	Ambient
Maximum Ramp Rate	
Ambient to 104 °C (219 °F)	15 °C/min (59 °F/min)
104 °C to 1000 °C (219 °F to 1832 °F)	50 °C/min (122 °F/min)
Gas Flow Rate	0 L/min to 10 L/min
Gas Requirements	
Pneumatic Air (dry, oil free)	45 psi (3.1 bar)
Furnace Air (dry, oil free)	35 psi (2.4 bar)
Nitrogen (99.5%)	35 psi (2.4 bar)
Oxygen (99.5%)	35 psi (2.4 bar)
***Ventilation Requirements**	1100 ft/min to 2900 ft/min adjustable (5.5 m/s to 15 m/s)
***Duct Size**	4 in (10 cm)

Note: The TGA801 must be vented to an external exhaust. If the distance from the TGA801 external blower to the external exhaust is less than 16 ft (5 m) a passive connection to a duct is acceptable.

Environmental Conditions	Operating Temp: 15 °C to 35 °C (59 °F to 95 °F) Humidity: 20% to 80% non-condensing Avoid installation locations with excess drafts, vibrations, and/or traffic
Sound Pressure Level	56 dBa analyzing and idle, 62 dBa cooling (max reading at operator's level per IEC/EN 61010-1)
Electrical Power Requirements	230 V~, 50/60 Hz, single phase, 24 A max, 0.25 A idle
Thermal Dissipation	Idle: 200 Btu/h* Analyzing: 3000 Btu/h**
Dimensions†	
TGA801	19.9 in H x 23.7 in W x 23.0 in D (50.5 cm x 60.2 cm x 58.4 cm)
External Blower	10.2 in H x 9.7 in W x 10.7 in D (25.9 cm x 24.6 cm x 27.2 cm)
Weight (approx.)	212 lb (96.1 kg) Shipping Weight (approx.): 300 lb (136 kg)

Part Numbers	
TGA801-SMC	TGA801 with PC and touch-screen display
TGA801-DMC	TGA801 Dual Furnace Package with PC and touch-screen display

**Average output for an instrument not running an analysis*

***Average output based on ASTM D7582 for the analysis of moisture, volatile, and ash material in coal. The maximum output for the same method is 15,000 Btu/h; which occurs for a brief duration when the furnace is in active cooling mode between the volatile and ash steps*

†Without PC and monitor; allow 10 in (25 cm) clearance on right side to route flexible exhaust tubing. Allow 6 in (15 cm) minimum access area around unit.

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Theory of Operation

The TGA801 Thermogravimetric Analyzer is designed to determine weight loss, including moisture, ash, volatile content, and Loss-on-Ignition (LOI), in various organic, inorganic, and synthetic materials. It is compliant with pertinent ASTM-approved methodologies and is applicable to various industries and applications, including coal/coke, cement, catalysts, foods, feeds, and milling products.

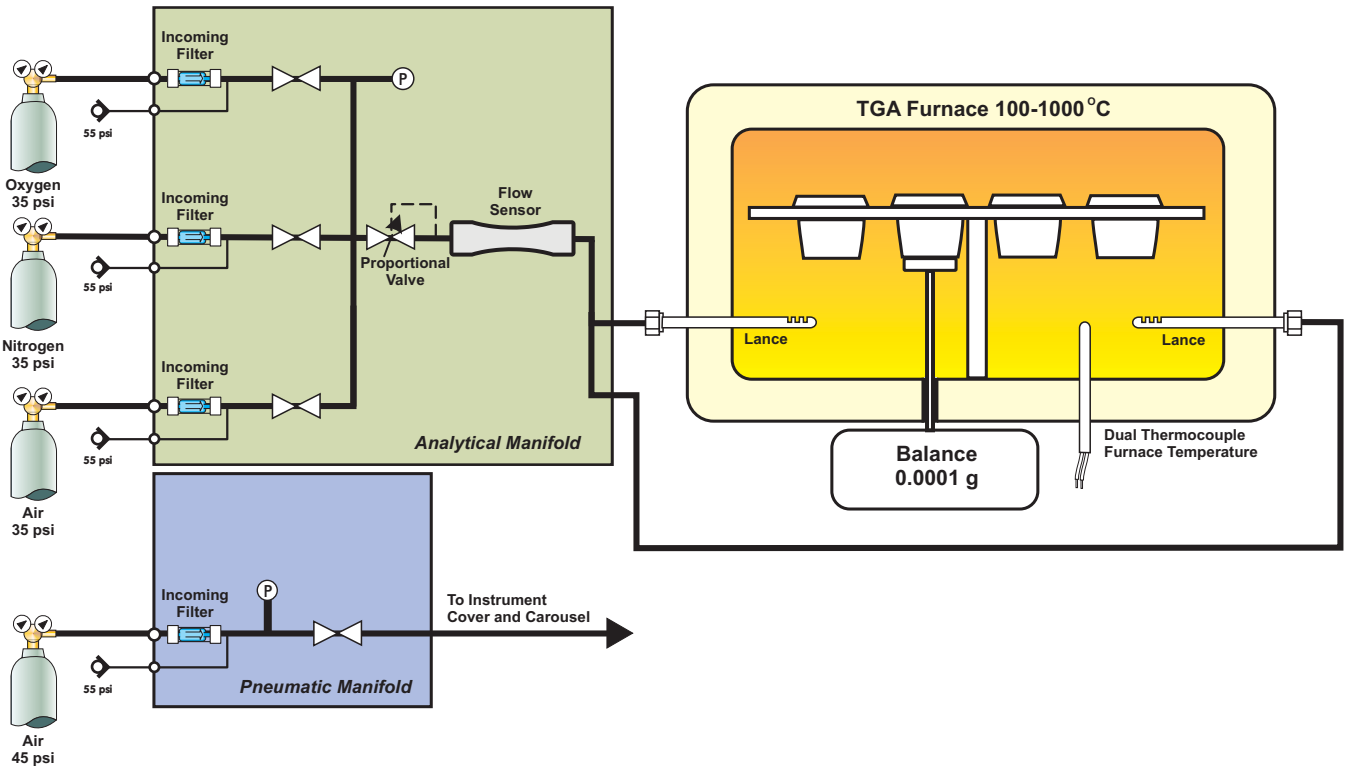
Weight change is measured as a function of temperature as samples are exposed to a temperature program in an atmosphere-controlled environment. The multi-sample furnace design allows for simultaneous analysis of up to 19 samples.

Analysis begins when samples have been logged in and empty crucibles have been loaded into the sample carousel. After empty crucible weights have been automatically recorded, the user is prompted to load samples. Once loaded, sample weights are recorded and the method-specified furnace-temperature program begins. One of three analytical gases (air, N_2, or O_2) are used to control the atmosphere inside the furnace during the course of an analysis. Temperature, temperature ramp rate, atmosphere, and duration (fixed time or mass constancy) are selectable for each method step. Moisture, volatile, and ash steps are most commonly utilized and are available as preset method steps.

The mass change of each sample is sequentially monitored throughout an analysis. Crucibles are automatically indexed to the position above (and lowered onto) the balance pedestal where sample weights are recorded. Percent mass change is typically reported at the end of each step; although alternative and additional calculations can be specified by the user in the method.

An external PC with LECO Cornerstone® brand software manages all of the quantitative calculations and saves all of the data.

Flow Diagram



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

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