

TGA701 Thermogravimetric Analyzer

Specification Sheet

Sample Size	5 grams (maximum)
Number of Samples	19 (+1 reference)
Precision	0.02% RSD (1 σ , 1 g inert sample)
Balance	
Resolution	0.0001 g
Oven Temperature	Ambient (minimum)
Temperature Control	
Minimum	100°C
Maximum	1000°C
Accuracy	2% of setpoint, or $\pm 2^\circ\text{C}$; whichever is greater
Stability	2% of setpoint, or $\pm 2^\circ\text{C}$; whichever is greater
Maximum Ramp Rate	
Ambient to 104°C	15°C/min.
104°C to 1000°C	50°C/min.
Gas Flow Rate	
Low	3.5 lpm
Medium Low	5.0 lpm
Medium	7.0 lpm
Medium High	8.5 lpm
High	10.0 lpm
Gas Pressure	
Air	45 psi (3.1 bars)
Nitrogen	35 psi (2.4 bars)
Oxygen	35 psi (2.4 bars)
*Forced Air Ventilation	70 to 160 CFM adjustable (33 to 75 lps)
*Duct Size	4 inch (100 cm)
<i>*Note: The TGA701 must be vented to an external exhaust. For moisture-only applications in which the furnace temperature does not exceed 150°C, and the distance from the right side of the TGA701 to the external exhaust is less than 10 feet (3 meters), a passive connection to a 3-inch (75 cm) duct is acceptable.</i>	
Optional External Blower	
Flow	140 cfm (65 l/s)
Power	115 V~ ($\pm 10\%$), single phase, 60 Hz, 1.6 A 230 V~ ($\pm 10\%$), single phase, 50/60 Hz, 0.6/0.8 A
Operating Temperature	15°C to 35°C
Humidity	20% to 80% non-condensing

Minimum Gas Purity

Air	99.5%; dry, oil-free
Nitrogen	99.9%
Oxygen	99.5%

Electrical Power Requirements

TGA701	230V~ ($\pm 10\%$), single phase, 50/60 Hz, 25 A
Printer	110V~, 50/60 Hz (Domestic) 220V~, 50/60 Hz (International)

Dimensions

TGA701	
Height	20.5 inch (52 cm)
Width	24 inch (61 cm)
Depth	22 inch (56 cm)
Weight	180 lb. (82 kg)

Total Shipping Weight

245 lb. (111 kg)

Part Numbers

TGA701S4C	TGA701 with PC tower, Windows®-based operating software, and flat panel monitor
TGA701D4C	TGA701 Dual Furnace Configuration with PC tower, Windows®-based operating software, and flat panel monitor

V~ denotes VAC.



Theory of Operation

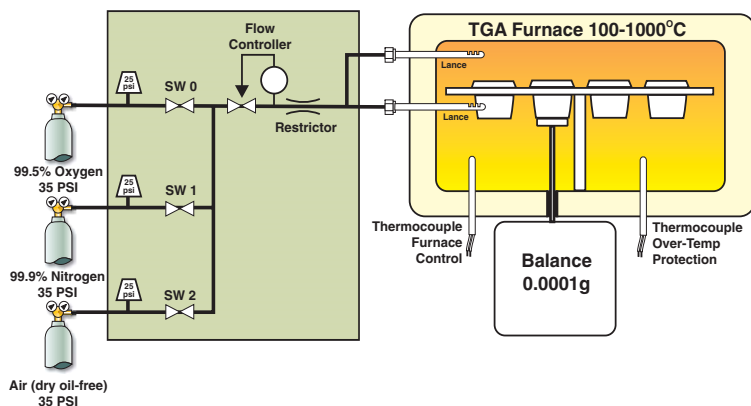
The TGA701 Thermogravimetric Analyzer is used to determine the composition of organic, inorganic, and synthetic materials. It measures weight loss as a function of temperature in a controlled environment. The instrument consists of a computer and a multiple sample furnace that allows up to 19 samples to be analyzed simultaneously.

After an analysis method has been selected, empty crucibles are loaded into the furnace carousel. The analysis method controls the carousel, furnace, and balance operation. On completion of crucible tare, each crucible is presented to the operator for sample loading. The starting sample weight is measured and stored automatically. Once all the crucibles have been loaded, analysis begins. The weight loss of each sample is monitored and the furnace temperature is controlled according to the selected analysis method. The percent weight loss for each sample is reported at the end of each analysis step.

The instrument contains an easy-to-follow menu-driven Windows®-based software program that allows analysis methods to be tailored to satisfy most analytical applications. Temperature, temperature ramp rate, and atmosphere are selectable for each step. Analysis methods can be entered to perform moisture, volatile, ash, or combinations of these three stages. If volatile results tend to be curvilinear, a non-linear regression technique can be used to improve accuracy. Other menus allow on-screen plotting of sample weight loss with hard copy selection after the screen review. Built-in diagnostic functions can be performed via menu selections.

The key to the automated analysis capability is the LECO multiple sample furnace. The 19-position sample carousel and balance pedestal are located in the furnace. One-half to five gram samples are contained in ceramic crucibles. The samples are automatically indexed to the position above the balance pan. The carousel is lowered to place a sample crucible onto the pedestal and the weight is recorded. The cycle continues throughout the entire program. All weighing is performed automatically.

Flow Diagram



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

World Headquarters/United States

In United States (800) 292-6141
(269) 985-5496

Outside U.S.A. (269) 983-5531

International Offices/Subsidiaries

Africa • LECO Africa (Pty.) Ltd.
Kempton Park, South Africa
Ph: 27-11-974-1681 • Fax: 27-11-974-1848

Argentina • LECO Argentina S.A.
Buenos Aires, Argentina
Ph: 54-11-4571-4651 • Fax: 54-11-4573-2722

Australia • LECO Australia Pty. Ltd.
Castle Hill, NSW, Australia
Ph: 61-2-9894-5955 • Fax: 61-2-9894-5247

Brazil • LECO Instruments Ltda.
Rio De Janeiro, Brazil
Ph: 55-213-461-9006 • Fax: 55-212-537-8575

Canada • LECO Instruments Ltd.
Mississauga, Ontario Canada
Ph: 905-564-6577 • Fax: 905-564-6582

China • LECO Corp/Beijing Office
Beijing, China
Ph: 86-10-6512-8877 • Fax: 86-10-6528-0373

Czech Republic • LECO Instrumente Plzen s.r.o.
Plzen/Czech Republic
Ph: 420-37-751-0811 • Fax: 420-37-725-9304

France • LECO France
GARGES-Les-GONESSE; Cedex, France
Ph: 33-134-45-4600 • Fax: 33-139-86-4105

Germany • LECO Instrumente GmbH
Mönchengladbach, Germany
Ph: 49-2166-687-0 • Fax: 49-2166-687-100

Hong Kong • LECO Instruments Hong Kong Ltd.
Kowloon, Hong Kong
Ph: 852-2387-7028 • Fax: 852-2708-4388

Italy • LECO Italy, S.R.L.
Milan, Italy
Ph: 39-02-953-43391 • Fax: 39-02-953-43461

Japan • Japan Analyst Corporation
Tokyo, Japan
Ph: 813 (3493) 7281 • Fax: 813 (5496) 7935

Korea • LECO Korea Co. Ltd.
Seoul, Korea
Ph: 822-562-4148 • Fax: 822-555-4135

Malaysia • LECO Instruments (M) Sdn. Bhd.
Selangor, D.E. Malaysia
Ph: 60-3-7805-2100 • Fax: 60-3-7805-2212

Mexico • LECO Mexico S.A. de C.V.
Monterrey, NL CP 64900 Mexico
Ph: 52-81-83-49-3927 • Fax: 52-81-83-49-6485

The Netherlands • LECO Europe B.V.
Geleen, The Netherlands
Ph: 31-46-4747473 • Fax: 31-46-4747333

Poland • LECO Polska Sp.zo.o
Katowice, Poland
Ph: 48-32-2000-540 • Fax: 48-32-2000-536

Russia • Z.A.O. LECO Center Moscow
Moscow, Russia
Ph: 7095-710-3818 • Fax: 7095-710-3826

Spain • LECO Instrumentos S.A.
Madrid, Spain
Ph: 3491-803-1250 • Fax: 3491-804-0577

Sweden • LECO Corporation Svenska AB
Upplands Väsby, Sweden
Ph: 468-594-11000 • Fax: 468-594-11011

Taiwan • LECO Instruments Taiwan Ltd.
Taipei, Taiwan R.O.C.
Ph: 886-22-518-4699 • Fax: 886-22-518-4671

Thailand • LECO Instruments (Thailand) Ltd.
Bangkok, Thailand
Ph: 66-2-886-4350 • Fax: 66-2-886-4351

United Kingdom • LECO Instruments (U.K.) Ltd.
Stockport, Cheshire, England
Ph: 44-161-487-5900 • Fax: 44-161-456-0969

Venezuela • Instrumentos LECO Venezuela, C.A.
Caracas, Venezuela
Ph: 58-212-242-6836 • Fax: 58-212-241-8663

Vietnam • LECO (Vietnam) Co., Ltd.
Ho Chi Minh City, Vietnam
Ph: 848-9105-645 • Fax: 848-9105-646

3000 Lakeview Avenue • St. Joseph, MI 49085-2396 • Phone: 800-292-6141 • Fax: 269-982-8977
info@leco.com • www.leco.com • ISO-9001 • No. FM 24045 • LECO is a registered trademark of LECO Corporation.