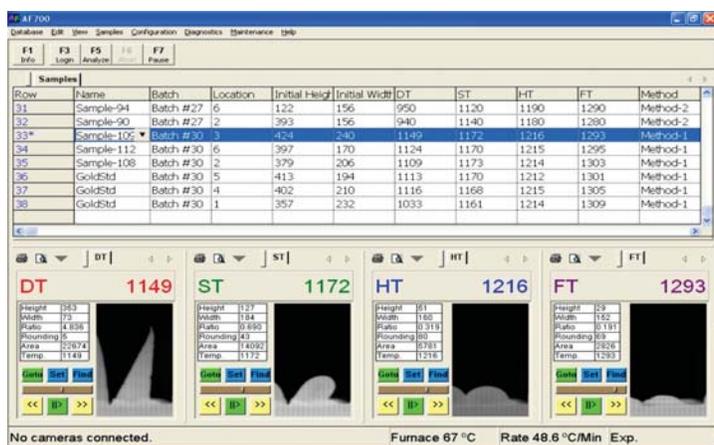


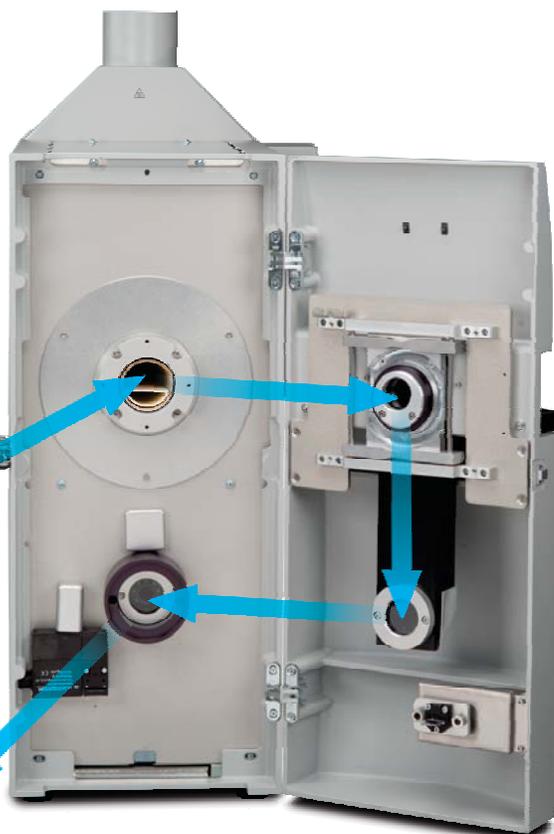
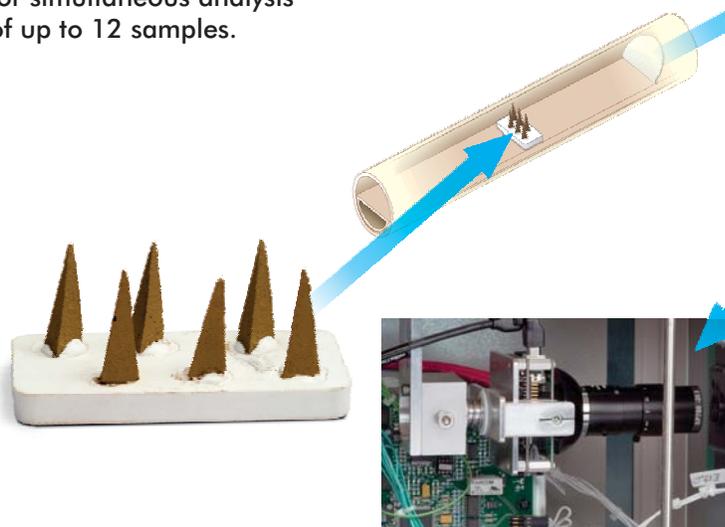
# AF700

## Ash Fusion

This state-of-the-art instrument offers you ASTM- and ISO-compliant techniques for automatically determining fusibility temperatures in coal and coke ash samples. Improved operational controls, automatic critical temperature measurement capability, digital archiving ability, integrated safety features, and increased instrument robustness are all a part of the AF700's advanced design.



Prepared ash cones are mounted on the ceramic tray then placed in the static horizontal furnace, which features an integrated viewing system and integrated camera. User-friendly operating software allows for seamless data and image management. Optional dual-configuration allows for simultaneous analysis of up to 12 samples.

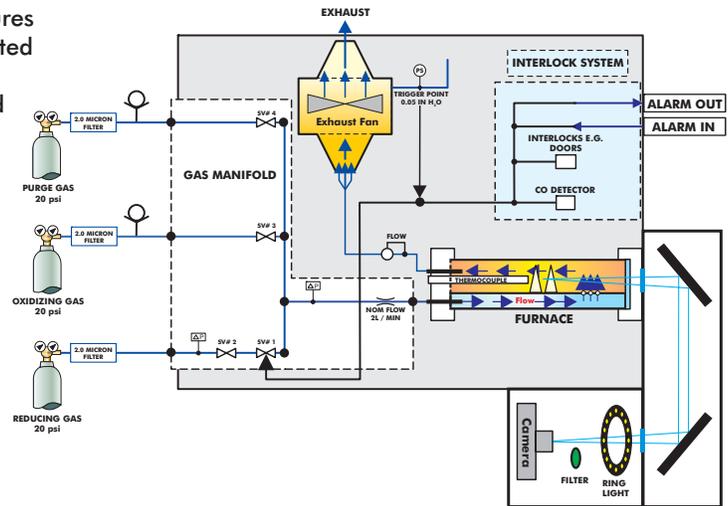


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## How It Works

LECO's AF700 is an ash fusibility determinator that automatically monitors ash cone deformation temperatures in coal ash and coke ash. Prepared ash cones are mounted on a ceramic tray and placed into a high-temperature, rampable furnace. The user selects an analytical method with a predefined furnace atmosphere (oxidizing or reducing) and a ramp rate (°C/min) for the furnace. Next, a digital camera collects images after the furnace temperature reaches the method-defined starting point. Predefined ash fusibility temperatures (IT, ST, HT, and FT) may be automatically determined using Image Recognition Functions (IRF) within the software. In addition, IRF allows the option of analysis to be automatically terminated after all deformation points have been reached for all samples—increasing throughput and furnace lifetime. A complete image history for all analyzed samples is digitally archived for easy retrieval and review. Archived images may be used to make subjective determinations of deformation temperatures.

## Flow Diagram



<b>Temperature Range</b>	400 °C to 1500 °C (750 °F to 2730 °F)
<b>Temperature Precision</b>	1064 °C ± 5 °C (99.98% pure gold wire sample melting point)
<b>Temperature Ramp Rate</b>	Programmable from 4 °C to 20 °C/min
<b>Temperature Display</b>	°C, °F, or °K
<b>Maximum Sample Load</b>	6 samples per analysis
<b>Ash Fusibility Determination</b>	Automatic or manual (IT, ST, HT, FT)
<b>Analysis Time</b>	4 h typical cycle time (depending on ramp rate and temperature range)
<b>Image Collection</b>	Digital (up to 20 frames/min)
<b>Image Resolution</b>	1280 x 1024 pixels
<b>Gas Requirements</b>	
Purge:	Nitrogen, 99.5%, 2.5 L/min at 25 psi (1.7 bar) ± 10%
Oxidizing:	Air, 2.5 L/min at 25 psi (1.7 bar) ± 10%; (source must be oil and water free)
Reducing:	CO and CO <sub>2</sub> mixtures, 2.5 L/min at 25 psi (1.7 bar) ± 10%
<b>Ventilation</b>	Built-in 160 ft <sup>3</sup> /min furnace
<b>Exhaust</b>	4 in diameter (10.2 cm) active exhaust hose capable of handling 160 ft <sup>3</sup> /min flow, with no back pressure
<b>Safety</b>	Built in CO monitor with auditory alarm, gas flow stopped on alarm
<b>Physical Dimensions</b>	38 in H x 13 in W x 32 in D (97 cm x 33 cm x 81 cm)
<b>Weights (approximate)</b>	
Instrument:	198 lb (90 kg)
Shipping:	249 lb (113 kg)
<b>Electrical Requirements</b>	215 V~ to 260 V~ (at max load), 50/60 Hz, single phase, 30 A; 23600 btu/h*
<b>Environmental Conditions</b>	
Operating Conditions:	15 °C to 35 °C (59 °F to 95 °F)
Relative Humidity:	20% to 80%, non-condensing
<b>Sound Pressure Level</b>	60 dBa (max reading at operator's level per IEC/EN 61010-1)
<b>Part Numbers</b>	
AF700SC	AF700 with external PC tower, operating software, and flat-panel monitor
AF700DC	AF700 Dual Furnace Configuration, operating software, and flat-panel monitor

\*Average output based on nominal operating parameters  
Specifications and part numbers may change. Consult LECO for latest information.

LECO Corporation  
3000 Lakeview Avenue | St. Joseph, MI 49085 | 800-292-6141 | Phone: 269-985-5496  
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