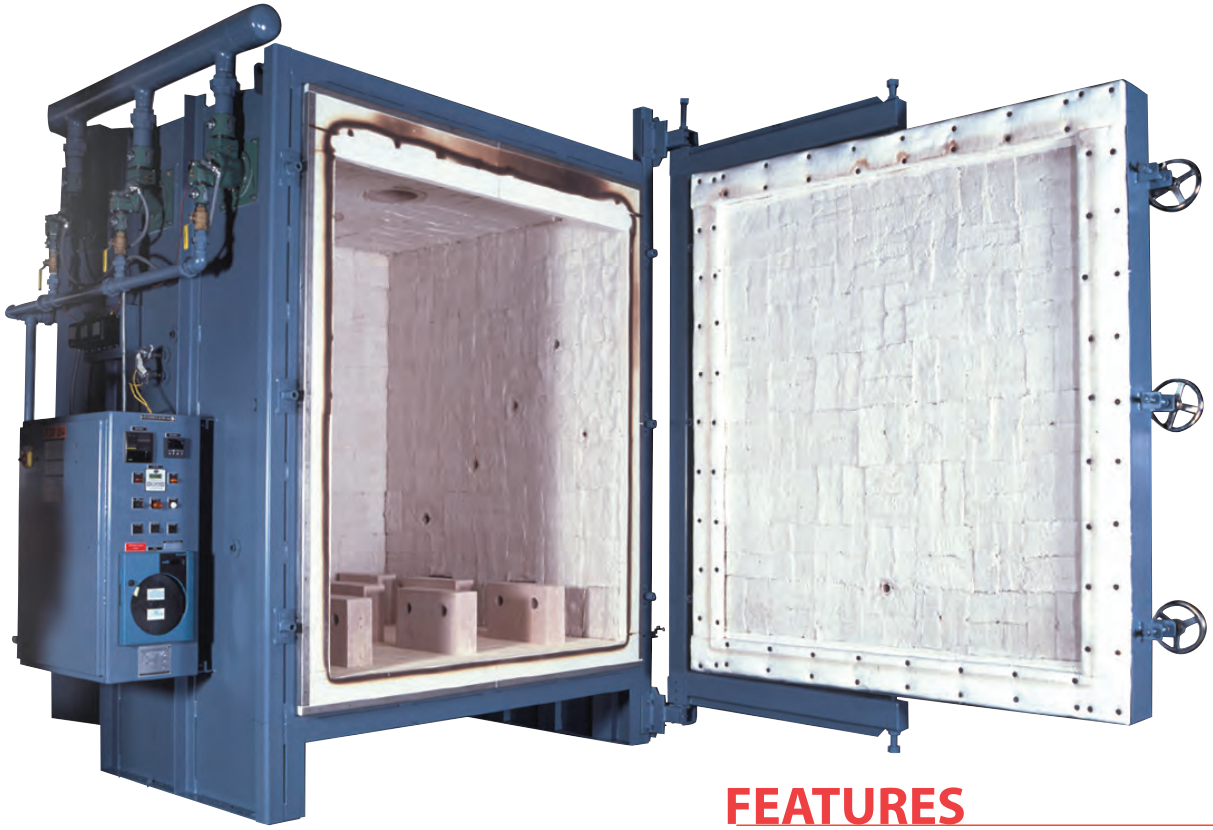
L&L Special
FURNACE CO, INC

XLG Series

FRONT LOADING MULTI-BURNER VELOCITY GAS FIRED BOX FURNACES



APPLICATIONS

The XLG furnaces are multipurpose gas fired box systems. They are highly uniform in temperature and feature accurate digital controls and multiple medium or high velocity Eclipse "Thermjet" proportionally controlled burners with an independent combustion blower. The XLG furnaces can be rated as high as 2,400°F (1,315°C), although the typical rating is 2,000°F (1,093°C). Connected gas pressure can be as low as 1 PSI. Firing with gas can be more economical than firing with electricity. In addition, the circulation of the hot gases, especially with multiple medium velocity burners, promotes good temperature uniformity without the use of high temperature fans. The burners can be adjusted to run lean to provide a slightly reduced atmosphere (although this can not be precisely controlled). These furnaces are excellent for ceramics processing and most metallurgical work where precise atmosphere control is not required. Systems can be designed with excess air for high uniformity at low temperatures.

FEATURES

ECLIPSE THERMJET VELOCITY BURNERS

The furnace is heated with three or more "Thermjet" medium or high velocity burners. These typically fire over the load with burner placement balanced to maximize circulation of the combustion products. In some large units they may be configured to fire over and under the load. These are sized for the proper BTU requirements and fuel type of your furnace. In addition, the option of high or medium velocity is an engineering choice dependent on load configuration and furnace size. The burners feature low NOX emissions, integral gas and air orifice plates (for precise gas and air balancing), high velocity for good temperature uniformity in the furnace, and excellent turndown ratio for a wide range of control. The burners are direct ignition, which eliminates the need for a bypass pilot.

FM GAS TRAIN

The gas system includes two hydraulic-mechanical shutoff valves, manual shutoff valve, pressure regulator and pressure gauges. Each burner has gas and air adjustment as well as shutoff valves. A proportionating valve, controlled by the combustion air, maintains stoichiometric air/gas ratio. Systems can be designed to fire with excess air for high uniformity at low temperatures. (IRI-rated gas train is optional.)

COMBUSTION AIR BLOWER SYSTEM

Combustion air is provided by a centrifugal combustion blower. A pressure gauge and air pressure switch monitor performance. Each

burner has separate orifice plates and butterfly valves for precise balancing of airflow. The control of firing rate is done with a motorized butterfly valve that controls the amount of combustion air relative to a 4-20mA signal from the temperature control.

ELECTRONIC FLAME SAFETY SYSTEM, SPARK IGNITOR AND PURGE TIMER

Each burner is ignited with a spark plug automatically actuated from the Eclipse Multi-Flame Series 6000 flame safety system. Ultra-violet(UV) sensors monitor each burner. Before ignition, the system goes through a timed purge with the combustion air. Safety interlocks include a combustion air pressure switch and gas high/low pressure switch. The Eclipse Multi-Flame 6000 flame monitoring system keeps the operator apprised of the status of the burners. It includes running time along with voltage signal to each UV sensor. It will alert the operator of any problem with the burners, airflow or gas pressure and will provide "first out" information to actually pinpoint a problem. The operator only needs to press the RESET key to start the burner firing sequence.

HIGH TEMPERATURE UNIFORMITY

The furnace is +/-15°F (+/-7°C) above 1,200°F (650°C) within the working dimensions. High uniformity at lower temperatures can be achieved with excess air.

EFFICIENT CERAMIC FIBER INSULATION

The sides, back, door and top surfaces are typically insulated with 2,300°F ceramic fiber modules, 8" thick, 10-lb density, although this is easily modified for different temperature ranges and applications. No asbestos is used. The bottom is insulated with a combination of castable and firebrick. Loads can be directly placed on this strong bottom. Optional castable piers and ceramic, silicon-carbide, serpentine or flat alloy hearth plates are available.

HEAVY-DUTY CASE WITH INTEGRAL STAND

The furnace case is constructed of heavy gauge steel with structural stiffeners, lifting rings and leveling bolts. The case is primed with a high temperature (800°F) silicone-based paint and finished with heat resistant enamel.

COUNTERBALANCED PNEUMATIC VERTICAL DOOR

The standard furnace door has a counterbalanced vertical door with a pneumatic opener and hand or foot operated valve. Double pivoted horizontal doors are optional (standard on six- and eight-foot-high models).

DIGITAL PID CONTROL SYSTEM WITH HIGH LIMIT

The standard control is a Honeywell UDC 2500 digital PID 3 mode tuning control. A Honeywell UDC 1200 high limit control is also included. All fuses and controls are located in a NEMA 12 panel. The thermocouple is dual Type K with an Inconel protection tube. A limit switch turns down the burners when the door is opened. Control voltage is 120 volts. The furnace is fully fused. Single-point power connection.

MEETS NEC, OSHA AND FM CODES

The wiring of the furnace meets the National Electrical Code. The combustion system meets FM standards. IRI standards are available. The furnace meets all OSHA codes in effect at manufacture. Furnace drawings can be submitted to FM or IRI for approval.

FACTORY TESTING, STARTUP AND INSTRUCTIONS

The furnace is completely tested in our factory up to maximum temperature. A very complete instruction manual is included. A factory technician will start up the furnace in your factory and make all adjustments on-site.

WARRANTY

The furnace is warranted for one year except for elements and thermocouples, which are warranted for six months.

OPTIONS

- **BLOWER FILTERS**
- **RAMP/SOAK PROGRAM CONTROLS**
- **TEMPERATURE RECORDERS:** Round and strip chart.
- **SPECIAL HEARTHS AND LOADERS:** Castable piers, silicon carbide, alloy hearths, load baskets and serpentine alloy hearths are available. Hydraulic forklift-type loaders are available.
- **SPECIAL DESIGNS:** Car Bottoms, Shuttle Types, Elevator Types, Tip Up Types.

View of a typical gas train.

SPECIFICATIONS

Model Number	Working Dimensions			Inside Dimensions			Outside Dimensions			Typical BTUS	Max Load Lbs	Ship Weight
	W	H	D	W	H	D	W	H	D			
XLG 324	36	24	48	48	48	48	120	148	112	1,200,000	1,800	5,400
XLG 334	36	36	48	48	60	60	120	172	112	1,200,000	1,800	5,800
XLG 336	36	36	72	48	60	84	120	172	136	1,500,000	2,700	7,300
XLG 444	48	48	48	60	72	60	132	196	112	1,500,000	2,400	6,800
XLG 446	48	48	72	60	72	84	132	196	136	2,500,000	3,600	8,200
XLG 556	60	60	72	72	84	84	144	220	136	3,500,000	4,500	9,600
XLG 666	72	72	72	84	96	84	156	150*	136	4,000,000	5,400	11,000
XLG 668	72	72	96	84	96	108	156	150*	160	5,000,000	7,200	13,200
XLG 888	96	96	96	108	120	108	180	174*	160	6,000,000	9,600	16,600
XLG 8810	96	96	120	108	120	132	180	174*	184	7,000,000	12,000	19,300

*The models with 72" and 96" inside height must have horizontal doors. Dimensions are in inches. Weight is in pounds. BTUS are sized for a particular application. Voltage can be 208, 240, 460, 575 or 380, three-phase. Larger sizes are available; however, loading is best accomplished with a car bottom or other special design version of this furnace. Heavier loading is available. Special sizes are available. Specifications are subject to change without notice.

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