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**Product Name :**  
Fully Automated Furnace

**Product Code :**  
LBNY-0001-800011



**Description :**

Fully Automated Furnace

**Technical Specification :**

Fully Automated Furnace

Fully Automated laboratory Furnace with microwave and conventional heating element.

**General Features and Specifications:**

Easy to program methods with automatic start time and temperature ramps.

Fast heating, high sample throughput, 3 different interchangeable setup, no exposure to heat and fumes, and with rugged and durable construction.

Pairing possibility with balance, printer and for automatic results

Uniform temperature distribution across the muffle cavity

Automated sulfated ashing

Ash up to 15 samples at one time

Easily Removable Furnace Inserts.

**Technical Specifications:**

Microwave Emission

Dual magnetron system with rotating diffuser for homogeneous microwave distribution in the cavity. Exclusive magnetron protection from reflected microwave power.

Magnetron Frequency: 2200 to 2600 MHz

Magnetron Output 2 x 950 Watt  $\pm 10\%$

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Magnetron Control: Continuous and PID- controlled microwave emission at all power levels Internal cavity illumination: At least 6 high-intensity LEDs.

#### Heating

Hybrid - microwave and conventional heating

Heating element placed in furnace walls for optimum heating efficiency

Dual protection system prevents microwave door from closing without the furnace door in place

IR sensor shuts down microwaves in the event of overheating

Programmable Temperature Control: Temperatures programming up to 1200 °C with individual ramp, dwell, and hold times with capacity to store a 20 programs/method.

#### Temperature Capabilities

High Temperature Furnace: 1200 °C

High Capacity Furnace: 1000 °C"

Microwave Cavity: Not less than 60 Liters and made of stainless steel housing with multi-layer PTFE coating.

Inlet/Outlet ports: upper flange 36 mm ID, lower flange 19 mm ID, plus additional ports on the side walls.

Door Construction: Completely made of 18/8 stainless steel, Self resealing pressure responsive door. Automatic door locking system.

Exhaust System: Built-in, located on the back of the microwave cavity and separated from the electronics to prevent corrosion. The flow rate not be less than 100 m<sup>3</sup>/h.

Video Camera: Built-in, with PTFE-Teflon foil protection Temperature Accuracy +/- NMT 3.0 °C"

#### Thermocouple

Traceable Dual-Element Thermocouple (Two thermocouples in one sheath. one thermocouple controls the operating temperature, the second thermocouple can be connected to a digital thermometer to verify the accuracy of the controlling thermocouple.

It is NIST-traceable with a certificate of calibration.

Cabinet design: Standardized widths for easy coil fit

Power : 10 to 20 kW

Microwave Cavity Volume: NLT 60 liters

Microwave Cavity Dimensions: 40 to 60 (W) x 40 to 60 (D) x 40to 60 (H) (cm)

Overall Instrument Dimensions: 50 to 80 (W) x 50 to 80 (D) x 50 to 100 (H) cm

#### Furnace Chamber Volume

High Temperature Furnace: NLT 15. liters

High Capacity Furnace: NLT 5.0 liters

Net weight: 40 kg -100 kg

Noise level: Less than 75dB

#### User Interface

Control terminal:

Touch-screen 6.5 TFT display. 640x480 VGA resolutions with 262K colors.

2 USB ports, 1 RS232 port, 1 LAN port, 2 Video ports.

Operating software:

The software allowing the user the edit, save, and run a virtually unlimited number of methods

#### Reaction Sensors Sensor 1

Direct temperature monitor and control via shielded thermocouple up to 1200°C.

NIST traceable for ISO and GLP practice available as optional.

Sensor 2 Contact-less temperature monitor and control via infrared sensor up to 1200°C in ±3°C @ 1000°C."

#### Configuration:

High-Throughput Setup: Rectangular muffle furnace; heating plate; thermocouple temperature sensor; ceramic thermowell; thermocouple fittings and ceramic honeycomb frit element.

Ultrafast Heating Setup: Circular muffle furnace; 5- place crucibles holder; metal tweezers; ceramic plate; heating ring up to 1200°C; entering adapter; infrared temperature control up to 1200°C and laser-based alignment module.

Sulfated Ashing Setup: Rectangular muffle furnace; heating plate, thermocouple temperature sensor; ceramic

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thermowell; thermocouple fittings; ceramic frit element; gas condensation module and acid scrubber module.

Balance Interface: RS-232, 9-pin serial interface

Printer Port: 25-pin parallel

Computer Interface: RS-232, 9-pin serial interface

Multiple USB and Ethernet ports for interfacing the instrument with external devices and to the local laboratory network

Accessories:

PC with software to interface and collect data

Traceable dual thermocouples and calibration source instruments.

30 x 20 ml, 20 x 50 ml and 10 x 100 ml Quartz Fiber Crucibles

All necessary standard accessories for the above three configurations need to be clearly identified with quantity and individual price along with the main equipment."

Up to 50 °C and up to

95% humidity (non-condensing):

Utility requirement:

Power supply: 220 ± 10 VAC, 50 Hz.

Standards and Safety Requirements:

Industry Requirements for Muffle Furnaces

Active ventilation for soot and odors free use.

Industry Requirements for Muffle Furnaces: (The requirements for methods that specify

Electrically heated furnaces, and also methods that specify ?microwave heated furnaces)



**Laboratory Instrument India**