### Crucible Furnaces

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<th>Furnace Type</th>
<th>Control Options</th>
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<tr>
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<td>800°C</td>
<td>Crucible Furnace</td>
<td>Standard</td>
</tr>
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<td>Heating of metals for welding</td>
<td>900°C</td>
<td>Crucible Furnace</td>
<td>Standard</td>
</tr>
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</tr>
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<td>1100°C</td>
<td>Crucible Furnace</td>
<td>Standard</td>
</tr>
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<td>Heating of copper</td>
<td>1000°C</td>
<td>Crucible Furnace</td>
<td>Standard</td>
</tr>
</tbody>
</table>

### Properties of Crucible Furnaces

- **Strong fluxing agents:** Sodium, potassium, boria, vanadium, and iron oxide.
- **Reducing conditions:** Oxygen depletion environments are suitable, high temperatures for melting, casting, annealing, and atmosphere processing.
- **Microprocessor-based independent control:** Assures accuracy and repeatability.

### Some Questions to Consider when Selecting a Lindberg/Blue M Furnace for Your Application

1. **What temperature is needed for the application?**
   - Lindberg/Blue M furnaces are listed by increasing maximum temperature: 1000°C, 1200°C, 1500°C, and 1700°C.

2. **What type of furnace is needed: box, tube or crucible?**
   - Each type of furnace may be used for many different types of applications. Here are some examples:
     - **Box Furnaces:** Suitable for a variety of industrial and laboratory applications. Advanced engineering and specialized construction techniques include variable density insulation, double wall/carbon, long-life heating elements and vertical, horizontal side swinging or swinging-down doors.
     - **Tube Furnaces:** Ideal for small samples in inert atmospheres. A crucible furnace may be appropriate for processing small samples in inert atmospheres. A crucible furnace may be appropriate for processing large samples or for ease of placement and access of samples.
     - **Crucible Furnaces:** Crucible furnaces are not recommended for use with these substances as they may damage insulation: fluorine, chlorine (above 650°C for chlorine), phosphates above 500°C, strong bases (sodium hydroxide), and hydrogen at low dew point above 1040°C would attack insulation.

3. **If a tube furnace seems appropriate for the application, please consider the following features:**
   - **Single zone or three zone furnace more appropriate for the application?**
     - A single zone furnace has one set of heating elements controlled by one controller. A three zone furnace has three groups of heating elements controlled by three controllers, one for each zone. A three zone furnace can be configured to help reduce the heat loss at the tube ends or to provide a gradient temperature along the length of a sample.
   - **Is a split-hinge or solid tube furnace needed?**
     - A split-hinge tube furnace allows a process tube to be easily changed and removed and may be appropriate if tubes must be changed on a frequent basis. A solid tube furnace may be appropriate if the tube will not be changed or removed from the furnace on a frequent basis.

4. **What size process tube will be used in the furnace?**
   - Most of our tube furnaces will accommodate a range of process tubes due to our interchangeable tube adapters. Please see the specifications for each furnace model for this information.

5. **What type of controller is needed?**
   - A single setpoint provides one ramp up to one temperature setpoint. A multiple setpoint provides one ramp up to one temperature setpoint. A single program, multiple segment controller provides one program with multiple ramps (change in temperature) and dwell temperature hold settings. A multiple program, multiple segment controller allows multiple programs to be stored in the controller memory, with each program offering multiple segments for temperature control. Please see page 35 for additional information on each type of controller.

6. **Are you concerned about safety? Will the furnace be left running while unattended or overnight?**
   - We offer an Over Temperature Control (OTC) feature that provides a redundant, back-up thermocouple and controller to shut down the furnace if the high temperature limit is reached. This requires a manual reset for optimum safety. This feature is designated by a “B” in the model number suffix or is available as an option on other model furnaces. Please see individual furnace specifications for additional information.
Lindberg/Blue M furnaces are useful for materials testing and investigation, analysis, quality control and production of ceramics, electronics, polymers and chemicals. With maximum temperature ranges from 1100°C to 1700°C, applications include ashing, sintering, crystallizing, annealing, fusion, tempering and hardening, atmosphere processing and more.

Performance And Convenience
Design techniques such as double shell construction and variable density insulation combine to enhance performance over conventional furnaces. Durable, high-strength hardware and a variety of control systems offer both convenience and versatility over a range of sophistication.

Safer To Operate, Up To 70% Cooler
Exterior temperatures of many Lindberg/Blue M furnaces are proven 70% cooler than competitive brands.** Reduced heat loss improves energy efficiency, and cooler exterior temperatures enhance operator safety.

Offering the industry’s largest selection of box, tube and crucible models used for rigorous industrial, scientific and laboratory research and production.
Lindberg/Blue M furnaces are useful for materials testing and investigation, analysis, quality control and production of ceramics, electronics, polymers and chemicals. With maximum temperature ranges from 1100°C to 1700°C, applications include ashing, sintering, crystallizing, annealing, fusion, tempering and hardening, atmosphere processing and more.

Performance And Convenience
Design techniques such as double shell construction and variable density insulation combine to enhance performance over conventional furnaces. Durable, high-strength hardware and a variety of control systems offer both convenience and versatility over a range of sophistication.

Unique Moldatherm Insulation
The patented Moldatherm ceramic fiber insulation composite has rapid heat-up and cool-down properties which allow quick turn-around for more productive furnace use. Moldatherm high temperature fiber is vacuum-formed around operating chambers to provide efficient radiant energy release, excellent uniformity, reduced operating cost and increased resiliency to thermal shock.

LGO Heating Element
The patented LGO heating element, light gauge overbend a standard component on many Lindberg/Blue M box and tube furnaces, delivers exceptional energy release, fast heat-up and recovery, reduced thermal process cycle time, and cost savings through quicker throughput and energy efficiency.

Power Controllers and Programmers
Lindberg/Blue M furnaces are available with built-in (integrated) or independent temperature controllers, depending on model selected. Control sophistication ranges from solid-state single setpoint to more versatile microprocessor-based systems with programming and communications options.

LGO heating elements on single- and three-zone tube furnaces offer superior radial and linear temperature uniformity with exceptional reliability.

Moldatherm Graduated Density Insulation

* Independent Study; test results available upon request.

Moldatherm Insulation

LGO Heating Element

Power Controllers and Programmers

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ranges from solid-state single setpoint to more versatile microprocessor-based systems with
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built-in (integrated) or independent temperature
controllers, depending on model selected. Control sophistication
ranges from solid-state single setpoint to more versatile microprocessor-based systems with
programming and communications options.

Integral controllers, self-contained and
mounted in the main control panel of the
furnace, save space and allow easy access with
quick plug-in maintenance.

Independent controllers can be
positioned adjacent to or remote from
the furnace, permitting furnaces to be used in
fume hoods or containment areas, or installed
in banks of multiple furnaces with central
control panels centrally located or grouped for
easy monitoring and control. Some furnaces can be
positioned or oriented as required (i.e. horizon-
tal or vertical), leaving available all installa-
tion and applications alternatives.

The LGO heating element is formed of coarsely shaped resistors woven partially sandwiched in Moldatherm insulation to create a single insulated module. Ran into an open groove to amplify energy release, the LGO element transfers more radiant energy to the process area.

LGO heating elements on single- and three-zone tube furnaces offer superior radial and linear temperature uniformity with exceptional reliability.

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Lindberg/Blue M furnaces are available with
built-in (integrated) or independent temperature
controllers, depending on model selected. Control sophistication
ranges from solid-state single setpoint to more versatile microprocessor-based systems with
programming and communications options.

Integral controllers, self-contained and
mounted in the main control panel of the
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The LGO heating element is formed of coarsely shaped resistors woven partially sandwiched in Moldatherm insulation to create a single insulated module. Ran into an open groove to amplify energy release, the LGO element transfers more radiant energy to the process area.

LGO heating elements on single- and three-zone tube furnaces offer superior radial and linear temperature uniformity with exceptional reliability.
Lindberg/Blue M Moldatherm 1100°C box furnaces feature a choice of microprocessor-based single setpoint or programmable control instrumentation. Available in four popular chamber sizes to meet the most demanding laboratory applications, these furnaces include unique insulation and heating element composites to minimize outer surface temperatures while maintaining uniform heat distribution within the chamber.

**Features and Benefits**

- Two control options
- Controlled heat-up rate eliminates thermal shock to materials
- Quick heat-up and cool-down rates
- Energy efficient Moldatherm insulation with embedded heating elements
- Unique double-wall construction minimizes exterior surface temperatures for operator safety and energy efficiency
- Side-hinge door for convenient operation and full chamber access
- Long-life Type “K” thermocouple
- Air vents (1” dia., top) and air inlet (.375” dia., rear) for inert atmosphere exchange. Will experience some leakage at door
- Removable and replaceable Moldatherm hearth plate supports load and prevents damage due to spillage
- Main power on/off switch on control panel
- Safety door switch to interrupt power to heating element when door is opened; protects heating element and minimizes exposure to end-user
- Available in 120V and 208/240V configurations

**Digital Single Setpoint Controller**

- Microprocessor-based control with selectable self-tuning feature sets best control parameters for the thermal process. PID control (proportional, integral, derivative) prevents overshoot
- Single segment, single setpoint, 1 ramp to setpoint
- Adjustable high limit overtemperature protection
- Simultaneous LED display of actual temperature vs. setpoint
- May be configured to display temperature in either °C or °F
- UL approval

**Applications**

- Ashing, organic and inorganic
- Heat treating
- Annealing
- Tempering
- Hardening
- Melting
- Fusing
- Bonding
- Drying
- Digestion of samples
- Asphalt testing

**Optional RS485 Digital Communications Port**

- RS485 Digital communications port available as an option. Allows controller to be connected to a PC for remote monitoring and control of the furnace. Up to 30 units can be connected to one PC. Please see page 35 for ordering information and additional options.
1100°C Moldatherm® Box Furnaces, Temperature Range: 100°C to 1100°C

<table>
<thead>
<tr>
<th>Furnace No.</th>
<th>Model No.</th>
<th>Control Type</th>
<th>Voltage, Hz, 1Ø Watts</th>
<th>Interior Dimensions H x F-B x W in&quot; (mm)</th>
<th>Exterior Dimensions H x F-B x W in&quot; (mm)</th>
<th>Weight lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.07 Cu. Ft. (1.99 liters)</td>
<td>BF51748A</td>
<td>Digital/OTP</td>
<td>120V, 50/60 Hz 1800</td>
<td>4&quot; (101.6) x 8&quot; (203.2) x 4&quot; (101.6)</td>
<td>17.5&quot; (444.5) x 20&quot; (508) x 15&quot; (381)</td>
<td>55 (25)</td>
</tr>
<tr>
<td>BF51748C</td>
<td>Digital/OTP</td>
<td>208/240V, 50/60 Hz 1800</td>
<td></td>
<td></td>
<td></td>
<td>55 (25)</td>
</tr>
<tr>
<td>BF51848A</td>
<td>Multiple Seg/1 Prog/OTP</td>
<td>120V, 50/60 Hz 1800</td>
<td></td>
<td></td>
<td></td>
<td>55 (25)</td>
</tr>
<tr>
<td>BF51848C</td>
<td>Multiple Seg/1 Prog/OTP</td>
<td>208/240V, 50/60 Hz 1800</td>
<td></td>
<td></td>
<td></td>
<td>55 (25)</td>
</tr>
<tr>
<td>0.1875 Cu. Ft. (5.3 liters)</td>
<td>BF51766A</td>
<td>Digital/OTP</td>
<td>120V, 50/60 Hz 1800</td>
<td>6&quot; (152.4) x 9&quot; (228.6) x 6&quot; (152.4)</td>
<td>21.5&quot; (546.1) x 21&quot; (533.4) x 17&quot; (431.8)</td>
<td>110 (50)</td>
</tr>
<tr>
<td>BF51766C</td>
<td>Digital/OTP</td>
<td>208/240V, 50/60 Hz 1800</td>
<td></td>
<td></td>
<td></td>
<td>110 (50)</td>
</tr>
<tr>
<td>BF51866A</td>
<td>Multiple Seg/1 Prog/OTP</td>
<td>120V, 50/60 Hz 1800</td>
<td></td>
<td></td>
<td></td>
<td>110 (50)</td>
</tr>
<tr>
<td>BF51866C</td>
<td>Multiple Seg/1 Prog/OTP</td>
<td>208/240V, 50/60 Hz 1800</td>
<td></td>
<td></td>
<td></td>
<td>110 (50)</td>
</tr>
<tr>
<td>0.65 Cu. Ft. (18.4 liters)</td>
<td>BF51794C</td>
<td>Digital/OTP</td>
<td>208/240V, 50/60 Hz 3500</td>
<td>9&quot; (228.6) x 14&quot; (355.6) x 9&quot; (228.6)</td>
<td>26&quot; (660.4) x 25.75&quot; (654.04) x 21&quot; (533.4)</td>
<td>130 (59)</td>
</tr>
<tr>
<td>BF51894C</td>
<td>Multiple Seg/1 Prog/OTP</td>
<td>208/240V, 50/60 Hz 3500</td>
<td></td>
<td></td>
<td></td>
<td>130 (59)</td>
</tr>
<tr>
<td>1.5 Cu. Ft. (42.5 liters)</td>
<td>BF51728C</td>
<td>Digital/OTP</td>
<td>208/240V, 50/60 Hz 5600</td>
<td>12&quot; (304.8) x 18&quot; (457.2) x 12&quot; (304.8)</td>
<td>28&quot; (711.2) x 30&quot; (762) x 24&quot; (609.6)</td>
<td>185 (84)</td>
</tr>
<tr>
<td>BF51828C</td>
<td>Multiple Seg/1 Prog/OTP</td>
<td>208/240V, 50/60 Hz 5600</td>
<td></td>
<td></td>
<td></td>
<td>185 (84)</td>
</tr>
</tbody>
</table>

Note: All models include 10' power cord except 1.5 cu. ft. models which require customer supplied power cord or hard wiring.

Note: Use with inert atmosphere will exhibit some leakage.

Contact your sales representative for CE Models.

Actual performance may vary depending on load, chamber size, sample placement, ambient temperature and environmental conditions.

800-252-7100 www.lindbergblue.com
Versatile LGO Series Box Furnaces feature the latest technical advances in heating elements, insulation and temperature control, all integrated into a self-contained cabinet. The patented LGO heating element (light gauge overbend) delivers maximum radiant heat energy to the process load. The LGO element is partially imbedded within the exclusive Moldatherm® insulation, combined with unique double shell construction to provide optimum temperature uniformity, energy efficiency, fast response, quick heat-up and rapid cool-down.

Features and Benefits
- Patented LGO (light gauge overbend) heating elements with Moldatherm insulation for efficient and economical transfer of heat to chamber, with low exterior temperatures
- Variable heat-up rate diminishes thermal shock to materials with quick heat-up and cool-down rates
- Choice of side hinge or vertical lift door; see specifications for model selection
- Air over 1/2 dia., top and air inlet (1/2″ dia.), rear for inert atmosphere exchange. May experience some leakage at door
- Soft-start, digital instrumentation for precise temperature setpoint and display
- Platinel II® thermocouple for long-term stability
- Main power on/off switch on control panel, control panel designed for easy maintenance access
- Safety door switch to interrupt power to heating element when door is opened; protects heating elements and minimizes exposure to end-user
- Removable shelves for versatility; 0.58 cu.ft. models include 1 two-part shelf, center position; 1.95 cu.ft. models have 3 shelf positions; 1 two-part shelf included standard
- Moldatherm hearthplate supports load and prevents damage due to spillage

Digital Single Program, Multiple Segment, Programmable Controller
- Microprocessor-based self-tuning PID control (proportional, integral, derivative) provides optimum thermal process, prevents overshoot
- Multiple programs and segments for ramp (up and down) and dwell (timed hold) temperature control. See page 35 for more information
- Adjustable high limit overtemperature protection
- Simultaneous LED display of actual temperature vs. setpoint
- May be configured to display temperature in either °C or °F

1200°C LGO™ Box Furnaces

Drying
Ashing
Annealing
Enameling
Tempering
Heat treating
Melting

Model BF51732BC, 1200°C LGO Box Furnace features digital control and OTC system.

Model BF51733C, 1200°C LGO Box Furnace with multiple segment, single program controller integrated into the main control panel.

Applications
Drying
Ashing
Annealing
Enameling
Tempering
Heat treating
Melting

LINDBERG/BLUE
800-252-7100 www.lindbergblue.com
**1500°C LGO Box Furnaces**

**Vertical Lift Door, 0.6 cu ft (16.4 liters), Temperature Range 100°C to 1200°C**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Integrated Digital Control</th>
<th>Volts, Hz, 1Ø</th>
<th>Watts</th>
<th>Interior Dimensions</th>
<th>Exterior Dimensions</th>
<th>Ship Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF51732C</td>
<td>Digital</td>
<td>208/240V, 50/60 Hz</td>
<td>4500</td>
<td>7&quot; x 11&quot; x 15&quot; (177.8 x 279.4 x 381)</td>
<td>27&quot; x 23&quot; x 24&quot; (685.8 x 584.2 x 609.6)</td>
<td>165 lbs (75 kg)</td>
</tr>
<tr>
<td>BF51732BC</td>
<td>Digital/OTC</td>
<td>208/240V, 50/60 Hz</td>
<td>4500</td>
<td>7&quot; x 11&quot; x 15&quot; (177.8 x 279.4 x 381)</td>
<td>27&quot; x 23&quot; x 24&quot; (685.8 x 584.2 x 609.6)</td>
<td>165 lbs (75 kg)</td>
</tr>
<tr>
<td>BF51732PC</td>
<td>Multi Seg/Multi Prog</td>
<td>208/240V, 50/60 Hz</td>
<td>5800</td>
<td>15&quot; x 15&quot; x 15&quot; (381 x 381 x 381)</td>
<td>33&quot; x 28&quot; x 29&quot; (838.2 x 711.2 x 736.6)</td>
<td>280 lbs (127 kg)</td>
</tr>
<tr>
<td>BF51732PBC</td>
<td>Multi Seg/Multi Prog/OTC</td>
<td>208/240V, 50/60 Hz</td>
<td>5800</td>
<td>15&quot; x 15&quot; x 15&quot; (381 x 381 x 381)</td>
<td>33&quot; x 28&quot; x 29&quot; (838.2 x 711.2 x 736.6)</td>
<td>280 lbs (127 kg)</td>
</tr>
<tr>
<td>BF51732PFMC</td>
<td>Multi Seg/Multi Prog/FM</td>
<td>208/240V, 50/60 Hz</td>
<td>5800</td>
<td>15&quot; x 15&quot; x 15&quot; (381 x 381 x 381)</td>
<td>33&quot; x 28&quot; x 29&quot; (838.2 x 711.2 x 736.6)</td>
<td>280 lbs (127 kg)</td>
</tr>
<tr>
<td>BF51732PBFMC</td>
<td>Multi Seg/Multi Prog/OTC/FM</td>
<td>208/240V, 50/60 Hz</td>
<td>5800</td>
<td>15&quot; x 15&quot; x 15&quot; (381 x 381 x 381)</td>
<td>33&quot; x 28&quot; x 29&quot; (838.2 x 711.2 x 736.6)</td>
<td>280 lbs (127 kg)</td>
</tr>
</tbody>
</table>

**Horizontal Side Swing Door, 2.0 cu ft (55.3 liters), Temperature Range 100°C to 1200°C**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Integrated Digital Control</th>
<th>Volts, Hz, 1Ø</th>
<th>Watts</th>
<th>Interior Dimensions</th>
<th>Exterior Dimensions</th>
<th>Ship Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF51842C</td>
<td>Digital</td>
<td>208/240V, 50/60 Hz</td>
<td>5800</td>
<td>15&quot; x 15&quot; x 15&quot; (381 x 381 x 381)</td>
<td>33&quot; x 28&quot; x 29&quot; (838.2 x 711.2 x 736.6)</td>
<td>280 lbs (127 kg)</td>
</tr>
<tr>
<td>BF51842BC</td>
<td>Digital/OTC</td>
<td>208/240V, 50/60 Hz</td>
<td>5800</td>
<td>15&quot; x 15&quot; x 15&quot; (381 x 381 x 381)</td>
<td>33&quot; x 28&quot; x 29&quot; (838.2 x 711.2 x 736.6)</td>
<td>280 lbs (127 kg)</td>
</tr>
<tr>
<td>BF51842PC</td>
<td>Multi Seg/Multi Prog</td>
<td>208/240V, 50/60 Hz</td>
<td>5800</td>
<td>15&quot; x 15&quot; x 15&quot; (381 x 381 x 381)</td>
<td>33&quot; x 28&quot; x 29&quot; (838.2 x 711.2 x 736.6)</td>
<td>280 lbs (127 kg)</td>
</tr>
<tr>
<td>BF51842PBC</td>
<td>Multi Seg/Multi Prog/OTC</td>
<td>208/240V, 50/60 Hz</td>
<td>5800</td>
<td>15&quot; x 15&quot; x 15&quot; (381 x 381 x 381)</td>
<td>33&quot; x 28&quot; x 29&quot; (838.2 x 711.2 x 736.6)</td>
<td>280 lbs (127 kg)</td>
</tr>
<tr>
<td>BF51842PFMC</td>
<td>Multi Seg/Multi Prog/FM</td>
<td>208/240V, 50/60 Hz</td>
<td>5800</td>
<td>15&quot; x 15&quot; x 15&quot; (381 x 381 x 381)</td>
<td>33&quot; x 28&quot; x 29&quot; (838.2 x 711.2 x 736.6)</td>
<td>280 lbs (127 kg)</td>
</tr>
<tr>
<td>BF51842PBFMC</td>
<td>Multi Seg/Multi Prog/OTC/FM</td>
<td>208/240V, 50/60 Hz</td>
<td>5800</td>
<td>15&quot; x 15&quot; x 15&quot; (381 x 381 x 381)</td>
<td>33&quot; x 28&quot; x 29&quot; (838.2 x 711.2 x 736.6)</td>
<td>280 lbs (127 kg)</td>
</tr>
</tbody>
</table>

**Note:** Required power cord and hardwiring are not included.

**Over Temperature Control (OC)**
- Adjustable digital overtemperature control, available on selected models with “F” suffix designation; see chart
- Protects furnace and load in the event of primary control circuit failure
- Override main controller and shuts off power to furnace if high limit is reached
- Manual re-set required for safety
- Operates via magnetic contacts through signal from independent thermocouple

**Optional RS485 Digital Communications Port**
- RS485 Digital Communications port available as an option. Allows controller to be connected to a PC for remote monitoring and control of the furnace. Up to 30 units can be connected to one PC. Please see page 35 for ordering information and additional options

**Flowmeter Option (FM)** (Inert Atmosphere Only)
- Available on selected models with “FM” designation; see chart
- Gas flowmeter, adjustable, located on front control panel
- Suitable for inert gas or air flow to chamber
- Allows fresh air exchange for ashing applications
- Not suitable for combustible or volatile gases

**Note:** Use with inert atmosphere will exhibit some leakage.

Actual performance may vary depending on load, chamber size, sample placement, ambient temperature and environmental conditions.

800-252-7100 www.lindbergbluem.com
Heavy-Duty 1200°C Box Furnaces feature a unique internal construction and outer shell design which reduce external surface temperatures without compromising interior temperature uniformity. Requires independent control console, Model No. CC58114C (ordered separately).

Features
- Individual heating elements at chamber top, bottom and sides for uniform heat distribution
- Swing-down door provides convenient loading platform
- Helically coiled, high temperature alloy wire elements for extended service life
- Unique Moldatherm® ceramic fiber insulation to allow rapid heat-up, recovery and cool-down rates
- High temperature insulation in vestibule and floating plug door to minimize heat loss and improve temperature control
- Spring-loaded door holds door securely shut; door rests in horizontal position when open
- Sight glass for convenient observation of heated load during operation
- Refractory plate heating unit (Model BF51442C)
- Heating element imbedded in Moldatherm insulation (Model BF51542C)
- Rugged, heavy-duty Inconel™ hearth plate supports load and protects the furnace from damage due to spillage (Model BF51542C)
- Long-life Platinel II® thermocouple with 10’ compensated lead wire and polarized plug

Applications
- Ashing
- Fusion
- Ignitions
- Alloying
- Sintering
- Heat-treating

Model BF51442C requires the 1200°C, CC58114C controller (below) ordered separately.

The Model CC58114C Controller can be positioned adjacent to or remote from the furnace, permitting applications in fume hoods or containment areas.
1200°C Box Furnace, Heavy Duty

With Refractory Plate Heating Element, Temperature Range 100 to 1200°C

<table>
<thead>
<tr>
<th>Furnace Model No.</th>
<th>Controller Volt, Hz, 1Ø Watts</th>
<th>Interior Dimensions, Furnace H x F x B in° (mm)</th>
<th>Exterior Dimensions, Furnace H x F x B in° (mm)</th>
<th>Ship Weight lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF51442C</td>
<td>CC58114C 208/240V, 50/60 Hz 30</td>
<td>10” (254) x 15” (381.0) x 14” (355.6)</td>
<td>59” (1500) x 30” (762.0) x 20” (508)</td>
<td>49 (22)</td>
</tr>
</tbody>
</table>

With Moldatherm® Heating Element (Four Sides), Temperature Range 100 to 1200°C

<table>
<thead>
<tr>
<th>Furnace Model No.</th>
<th>Controller Volt, Hz, 1Ø Watts</th>
<th>Interior Dimensions, Furnace H x F x B in° (mm)</th>
<th>Exterior Dimensions, Furnace H x F x B in° (mm)</th>
<th>Ship Weight lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF51542C</td>
<td>CC58114C 208/240V, 50/60 Hz 30</td>
<td>10” (254) x 15” (381.0) x 14” (355.6)</td>
<td>59” (1500) x 30” (762.0) x 20” (508)</td>
<td>65 (29.5)</td>
</tr>
</tbody>
</table>

Note: Required power cord, hardwiring and interconnecting wiring are not included.

1000°C Digital, Single Setpoint Controller

Control console is fully wired and includes advanced microprocessor-based digital control, a solid-state power module, on/off circuit breaker and thermocouple input jack. Includes microprocessor-based PID control (proportional, integral, derivative), with single program with multiple segments for ramp (up and down) and dwell timed hold temperature control. See page 35 for more information. Built-in adjustable high limit overtemperature protection. Simultaneous LED display of actual temperature vs. setpoint. May be configured to display temperature in either °C or °F.

Option P 1000°C Digital Single Program, Multiple Segment Programmable Controller

Control console is fully wired and includes advanced microprocessor-based digital control, a solid-state power module, on/off circuit breaker and thermocouple input jack. Includes microprocessor-based PID control (proportional, integral, derivative), with single program with multiple segments for ramp (up and down) and dwell timed hold temperature control. See page 35 for more information. Built-in adjustable high limit overtemperature protection. Simultaneous LED display of actual temperature vs. setpoint. May be configured to display temperature in either °C or °F.

Option B Overtemperature Control (OTC)

Adjustable digital overtemperature control, factory installed on selected control consoles with “B” suffix designation, see chart. Protects furnace and load in the event of primary control circuit failure. Overrides main controller and shuts off power to furnace if high limit is reached. Manual reset required for safety. Operates via magnetic contacts through signal from independent thermocouple.

Optional RS485 Digital Communications Port

RS485 Digital communications port available as an option. Allows controller to be connected to a PC for remote monitoring and control of the furnace. Up to 30 units can be connected to one PC. Please see page 35 for ordering information and additional options.

With Overtemp Control

<table>
<thead>
<tr>
<th>Controller Model No.</th>
<th>Digital Programmable Controller Volt, Hz, 1Ø Watts</th>
<th>Maximum Amps</th>
<th>Exterior Dimensions, Furnace H x F x B in° (mm)</th>
<th>Ship Weight lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC58114C</td>
<td>CC58114BC 208/240V, 50/60 Hz 30</td>
<td>40</td>
<td>59” (1500) x 30” (762.0) x 20” (508)</td>
<td>65 (29.5)</td>
</tr>
<tr>
<td>CC58114PC</td>
<td>CC58114PC 208/240V, 50/60 Hz 30</td>
<td>40</td>
<td>59” (1500) x 30” (762.0) x 20” (508)</td>
<td>65 (29.5)</td>
</tr>
</tbody>
</table>

Note: Required power cord, hardwiring and interconnecting wiring are not included.

Heat-up/Cool-down Chart

- Required power cord, hardwiring and interconnecting wiring are not included.
- Actual performance may vary depending on load, chamber size, sample placement, ambient temperature and environmental conditions.

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### Features
- Double-wall construction with Moldatherm® insulation for rapid heat-up and cool-down, energy efficiency and cooler exterior surface temperatures.
- Silicone carbide heating elements for long-life, safety and reliable service with maximum energy savings.
- Safety door switch interrupts power to heating elements when door is opened; protects elements and minimizes exposure to operator.
- Moldatherm hearthplate supports load and protects interior from spillage and mishandling.
- Type “R” Thermocouple is integrated into chamber backwall.

### Digital Single Program, Multiple Segment Programmable Controller
- Microprocessor-based PID control, single program with multiple segments for ramp (up and down) and dwell (timed hold) temperature control.
- See page 35 for more information.

### Digital Multiple Program, Multiple Segment Programmable Controller
- Microprocessor-based PID control, multiple programs and segments for ramp (up and down) and dwell (timed hold) temperature control.
- See page 35 for more information.

### Option B Overtemperature Control (OTC)
- Adjustable digital overtemperature control, protects furnace and load in the event of primary control circuit failure.
- Available on selected models with “B” suffix designation; see chart.
- Overrides main controller and shuts off power to furnace if high limit is reached.
- Operates via magnetic contacts through signal from independent thermocouple.

### Optional RS485 Digital Communications Port
- RS485 Digital communications port available as an option.
- Allows controller to be connected to a PC for remote monitoring and control of the furnace.
- Up to 30 units can be connected to one PC.
- Please see page 35 for ordering information and additional options.

### 1500°C Box Furnaces, Multi-Purpose, Integral Control

#### Digital Single Program, Multiple Segment Programmable Controller
- Microprocessor-based PID control, single program with multiple segments for ramp (up and down) and dwell (timed hold) temperature control.
- See page 35 for more information.
- Adjustable high limit overtemperature protection.
- Simultaneous LED display of actual temperature vs. setpoint in either °C or °F.

#### Digital Multiple Program, Multiple Segment Programmable Controller
- Microprocessor-based PID control, multiple programs and segments for ramp (up and down) and dwell (timed hold) temperature control.
- See page 35 for more information.
- Adjustable high limit overtemperature protection.
- Simultaneous digital LED display of actual temperature vs. setpoint in either °C or °F.

#### Option B Overtemperature Control (OTC)
- Adjustable digital overtemperature control, protects furnace and load in the event of primary control circuit failure.
- Available on selected models with “B” suffix designation; see chart.
- Overrides main controller and shuts off power to furnace if high limit is reached.
- Operates via magnetic contacts through signal from independent thermocouple.

### 1500°C Box Furnaces

#### Vertical Lift Door, Temperature Range: 500°C to 1500°C

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Digital Control</th>
<th>Volts, Hz, 1Ø</th>
<th>Watts</th>
<th>Door</th>
<th>Interior Dimensions (in)</th>
<th>Exterior Dimensions (in)</th>
<th>Ship Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF51433C</td>
<td>Multi Seg/1 Prog</td>
<td>208/240V, 50/60 Hz</td>
<td>6400</td>
<td>Vertical Lift</td>
<td>5” x 12” x 12”</td>
<td>26” x 30” x 25”</td>
<td>320 (145)</td>
</tr>
<tr>
<td>BF51433BC</td>
<td>Multi Seg/1 Prog/OTC</td>
<td>208/240V, 50/60 Hz</td>
<td>6400</td>
<td>Vertical Lift</td>
<td>5” x 12” x 12”</td>
<td>26” x 30” x 25”</td>
<td>320 (145)</td>
</tr>
<tr>
<td>BF51433PC</td>
<td>Multi Seg/Multi Prog</td>
<td>208/240V, 50/60 Hz</td>
<td>6400</td>
<td>Vertical Lift</td>
<td>5” x 12” x 12”</td>
<td>26” x 30” x 25”</td>
<td>320 (145)</td>
</tr>
<tr>
<td>BF51433PBC</td>
<td>Multi Seg/Multi Prog/OTC</td>
<td>208/240V, 50/60 Hz</td>
<td>6400</td>
<td>Vertical Lift</td>
<td>5” x 12” x 12”</td>
<td>26” x 30” x 25”</td>
<td>320 (145)</td>
</tr>
</tbody>
</table>

#### Side Swing Door, Temperature Range: 500°C to 1500°C

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Digital Control</th>
<th>Volts, Hz, 1Ø</th>
<th>Watts</th>
<th>Door</th>
<th>Interior Dimensions (in)</th>
<th>Exterior Dimensions (in)</th>
<th>Ship Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF51643C</td>
<td>Multi Seg/1 Prog</td>
<td>208/240V, 50/60 Hz</td>
<td>14800</td>
<td>Side Swing</td>
<td>9” x 15” x 11”</td>
<td>31” x 30” x 28”</td>
<td>320 (145)</td>
</tr>
<tr>
<td>BF51643BC</td>
<td>Multi Seg/1 Prog/OTC</td>
<td>208/240V, 50/60 Hz</td>
<td>14800</td>
<td>Side Swing</td>
<td>9” x 15” x 11”</td>
<td>31” x 30” x 28”</td>
<td>320 (145)</td>
</tr>
</tbody>
</table>

#### Note:
- Required power cord and hardwiring are not included.
### 1500°C Box Furnace, Independent Control

#### 1500°C Box Furnace, Brick Sidewall Composition, Temperature Range 500°C to 1500°C

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Controller Volts, Hz, 1Ø</th>
<th>Ship Weight lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF51333C</td>
<td>208/240V, 50/60 Hz</td>
<td>440 (200)</td>
</tr>
</tbody>
</table>

Note: Required power cord, hardwiring and interconnecting wiring are not included. Silicon-carbide heating elements. Fitted hearth plate protects interior from spills. Type “K” thermocouple integrated into chamber backwall. Includes 10’ compensated thermocouple lead wire and polished plug.

#### 1500°C Digital, Single Setpoint Controller

Control console is fully wired and includes advanced microprocessor-based digital control, a solid-state power module, on/off circuit breaker and thermocouple input jack. Includes microprocessor-based PID control (proportional, integral, derivative), single segment, single setpoint, 1 ramp to setpoint. Built-in adjustable high limit overtemperature protection. Simultaneous LED display of actual temperature vs. setpoint. May be configured to display temperature in either °C or °F.

#### Option P 1500°C Digital Single Program, Multiple Segment Programmable Controller

Control console includes advanced microprocessor-based digital control, a solid-state power module, on/off circuit breaker and thermocouple input jack. Includes microprocessor-based PID control (proportional, integral, derivative), single program with multiple segments for ramp (up and down) and dwell (mid-term hold) temperature control. See Page 35 for more information. Built-in adjustable high limit overtemperature protection. Simultaneous LED display of actual temperature vs. setpoint. May be configured to display temperature in either °C or °F.

#### Option B Overtemperature Control (OTC)

Adjustable digital overtemperature control, factory-installed on selected control console with “B” suffix designation; see chart. Protects furnace and load in the event of primary control circuit failure. Overrides main controller, assumes temperature control and shuts off power to furnace if high limit is reached. Manual reset required for safety. Operates via magnetic contacts through signal from independent thermocouple.

#### Optional RS485 Digital Communications Port

RS485 Digital communications port available as an option. Allows controller to be connected to a PC for remote monitoring and control of the furnace. Up to 30 units can be connected to one PC. Please see page 35 for ordering information and additional options.

<table>
<thead>
<tr>
<th>Controller Model No.</th>
<th>Digital With With Overtemp Programmer Control</th>
<th>Electrical</th>
<th>Maximum</th>
<th>Exterior</th>
<th>Ship Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Volts, Hz</td>
<td>Amps</td>
<td>Dimensions</td>
<td>lbs (kg)</td>
</tr>
<tr>
<td>CC58125C</td>
<td></td>
<td>208/240V</td>
<td>60</td>
<td>10&quot; x 19&quot; x 14'</td>
<td>35 (16)</td>
</tr>
<tr>
<td>CC58125BC</td>
<td></td>
<td>208/240V</td>
<td>60</td>
<td>10&quot; x 19&quot; x 14'</td>
<td>35 (16)</td>
</tr>
<tr>
<td>CC58125PC</td>
<td></td>
<td>208/240V</td>
<td>60</td>
<td>10&quot; x 19&quot; x 14'</td>
<td>35 (16)</td>
</tr>
<tr>
<td>CC58125PBC</td>
<td></td>
<td>208/240V</td>
<td>60</td>
<td>10&quot; x 19&quot; x 14'</td>
<td>35 (16)</td>
</tr>
</tbody>
</table>

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Research and Pilot Plant Production

**The General Purpose 1700°C Box Furnace**

The General Purpose 1700°C Box Furnace with independent control are designed for applications which require extremely rapid heat-up rates, with 3500 watt models reaching 1700°C in as little as 15 minutes. Choose from two popular chamber sizes, each with a fully programmable independent controller (ordered separately, see chart).

**Features**

- Available in two popular chamber sizes (see chart)
- Double shell design for lower external cabinet temperature with energy savings
- Moldatherm® high temperature ceramic fiber insulation with advanced graded design for fast heat-up and resistance to thermal shock
- Vertically hinged door lifts up and out of the way to save space and minimize exposure to the operator
- Removable panels for easy access to replaceable heating elements and thermocouples
- Moldatherm hearthplate supports load and protects chamber from spills or mishandling
- High volume cooling fans move air between inner and outer chamber to reduce exterior shell temperatures and improve energy efficiency and operator safety
- Long-life type B thermocouples with 10' compensated lead wire and polarized plug for accurate high temperature measurement

**Smart Heating Elements**

- Molybdenum disilicide elements with unique right angle bend and sidewall mounting reduce maintenance usually associated with element terminations and mounting
- Designed for easy replacement without matching resistance values
- Fast heat-up and recovery with excellent uniformity and energy efficiency
- Increased resistance to thermal shock, ideal for rapid cycling over extended periods

**Applications**

- Sintering
- Ashing
- Bonding
- Melting
- Metals and ceramic composites

---

**1700°C Box Furnaces, Independent Control**

Programmable Controller, 1700°C Model CC70246PCO/MC
Lindberg/Blue M 1700°C Programmable Controllers provide multiple programs and multiple segments for ramp (up and down) and dwell (timed hold) temperature control. The controller visually displays ramp rate, dwell time, program segment and percent power output. A holdback feature allows the operator to set a “process vs setpoint” temperature value which, when exceeded, holds the program to allow the process to catch up. Please see page 35 for additional information.

The controller includes a selectable self-tuning feature which sets the best PID settings for the thermal process. LED display indicates actual temperature. High limit overtemperature protection is standard. The control console includes a circuit breaker, power module, transformer and cooling fans.

Controllers include RS485 data port (communications card and port) for connection to remote computer, allowing modification, interrogation and data transfer of all instrument control and configuration parameters. Up to 30 units can be connected to one PC. Software is not included, but is available as an option. Please see page 35 for additional options and information.

1700°C Controllers, Programmable, With Communications

<table>
<thead>
<tr>
<th>Controller Model No.</th>
<th>Digital Programmer</th>
<th>With Overtemp Controller</th>
<th>Electrical Volts, Hz</th>
<th>Watts</th>
<th>Interior Dimensions H x F-B x W in&quot; (mm)</th>
<th>Exterior Dimensions H x F-B x W in&quot; (mm)</th>
<th>Ship Weight lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF51314C-059346P050K</td>
<td></td>
<td></td>
<td>208/240V, 50/60 Hz</td>
<td>5000</td>
<td>6.5 x 10.5 x 10.5 (165.1 x 267)</td>
<td>15 x 25 x 25 (381 x 635 x 635)</td>
<td>115 (53)</td>
</tr>
<tr>
<td>BF51524C-059346P050K</td>
<td></td>
<td></td>
<td>208/240V, 50/60 Hz</td>
<td>5000</td>
<td>8.5 x 14.5 x 14.5 (215.9 x 368.3)</td>
<td>19.75 x 39 x 39 (500.05 x 990.6 x 990.6)</td>
<td>130 (59)</td>
</tr>
</tbody>
</table>

Option B Overtemperature Control (OTC)

Adjustable digital overtemperature control, factory installed on selected control consoles with “B” suffix designation; see chart. Protects furnace and load in the event of primary control circuit failure. Overrides main controller and shuts off power to furnace if high limit is reached. Manual re-set required for safety. Operates via signal from independent thermocouple.

<table>
<thead>
<tr>
<th>Controller Model No.</th>
<th>Digital Programmer</th>
<th>With Overtemp Controller</th>
<th>Electrical Volts, Hz</th>
<th>Watts</th>
<th>Interior Dimensions H x F-B x W in&quot; (mm)</th>
<th>Exterior Dimensions H x F-B x W in&quot; (mm)</th>
<th>Ship Weight lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS5549P030K</td>
<td></td>
<td></td>
<td>208/240V, 50/60 Hz</td>
<td>1000</td>
<td>10 x 13 x 15 (254 x 330)</td>
<td>15 x 35 x 35 (381 x 889 x 889)</td>
<td>95 (43)</td>
</tr>
<tr>
<td>MS5549P050K</td>
<td></td>
<td></td>
<td>208/240V, 50/60 Hz</td>
<td>1000</td>
<td>10 x 13 x 15 (254 x 330)</td>
<td>15 x 35 x 35 (381 x 889 x 889)</td>
<td>95 (43)</td>
</tr>
</tbody>
</table>

Note: Required power cord, hardwiring and interconnecting wiring are not included.

Heat-Up/Cool-Down

Model BF51314C—No Load

Heat-Up-Cool-Down

Model BF51314C—No Load

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Actual performance may vary depending on load, chamber size, sample placement, ambient temperature and environmental conditions.
Large Chamber 1700°C Box Furnaces are designed for efficient, high temperature use with minimal maintenance.

Lindberg® Graduated Density insulation adds to safety and performance by forming enhanced insulation protection between the high temperature chamber and exterior cabinet surface. Unique right angle heating elements and an integrated control system (a choice of single setpoint or programmable control) combine to deliver safe, dependable operation.

**Construction**
- Available in two popular chamber sizes (see chart)
- Energy efficient double shell design for lower uniformity, lower external cabinet temperature
- Moldatherm high temperature ceramic fiber insulation with advanced graded design for fast heat-up and resistance to thermal shock
- Side swing door provides full and easy access to chamber, protects user from heat surge
- Removable panels for easy access to replaceable heating elements and thermocouples
- Atmospheres, purge, “P” chimney, for fresh air or inert gas infill (located at back wall, bottom)
- Moldatherm hearth plate supports load and protects chamber from damage due to spillage
- High volume cooling fans move air between inner and outer chamber to lower exterior shell temperatures and improve energy efficiency
- Solid-state power module with ammeter, circuit breaker, transformer and front panel indicator lights for “Ready Elements” and “Main Power Applied”
- Long-life type “B” thermocouples for accurate high temperature measurement
- Safety power disconnect switch cuts power to heating elements when door is opened

**Smart Heating Elements**
- Molybdenum disilicide elements with unique right angle bend and side wall mounting to reduce maintenance associated with element termination and mounting
- Energy efficient, fast heat-up and response
- Increased resistance to thermal shock, ideal for rapid cycling over extended periods
- Designed for easy replacement without matching resistance values

**Applications**
- Sintering
- Ashing
- Bonding
- Melting
- Metals and ceramic composites

**Integrated Controls**

**1700°C Box Furnaces, Large Chamber, Integral Control**

800-252-7100  www.lindbergblue.com
Digital, Single Setpoint Controller

- Microprocessor-based PID control (proportional, integral, derivative) prevents overshoot
- Single segment, single setpoint, 1 ramp to setpoint
- Adjustable high limit overtemperature protection
- Simultaneous LED display of actual temperature vs. setpoint
- Adjustable high limit overtemperature protection
- Single segment, single setpoint, 1 ramp to setpoint
- Adjustable high limit overtemperature protection
- Simultaneous LED display of actual temperature vs. setpoint
- May be configured to display temperatures in either °C or °F
- Programmable Control With Communications
  - Available on “D” Model
  - Control includes RS485 data port (communications card and port) for connection to remote computer, allowing modification, interrogation and data transfer of all instrument control and configuration parameters. Up to 30 units can be connected to one PC. Software is not included, but is available as an option. Please see page 95 for additional options and information.
- Option P Digital Multiple Program, Multiple Segment Programmable Controller
  - Microprocessor-based PID control (proportional, integral, derivative) prevents overshoot
  - Multiple programs and segments for ramp (up and down) and dwell (timed hold) temperature control. See page 35 for more information
- LED display of actual temperature
- May be configured to display temperatures in either °C or °F
- Programmable Control With Communications
  - Available on “D” Model
  - Control includes RS485 data port (communications card and port) for connection to remote computer, allowing modification, interrogation and data transfer of all instrument control and configuration parameters. Up to 30 units can be connected to one PC. Software is not included, but is available as an option. Please see page 95 for additional options and information.

Option B Overtemperature Control (OTC)

- Adjustable digital overtemperature control, available on selected models with “B” suffix designation, see chart
- Protects furnace and load in the event of primary control circuit failure
- Overrides main controller and shuts off power to furnace if high limit is reached
- Manual reset required for safety
- Operates via magnetic contacts through signal from independent thermocouple
- Factory installed, specify when ordering

Option P Digital Multiple Program, Multiple Segment Programmable Controller

- Microprocessor-based PID control (proportional, integral, derivative) prevents overshoot
- Multiple programs and segments for ramp (up and down) and dwell (timed hold) temperature control. See page 35 for more information
- LED display of actual temperature
- May be configured to display temperatures in either °C or °F
- Programmable Control With Communications
  - Available on “D” Model
  - Control includes RS485 data port (communications card and port) for connection to remote computer, allowing modification, interrogation and data transfer of all instrument control and configuration parameters. Up to 30 units can be connected to one PC. Software is not included, but is available as an option. Please see page 95 for additional options and information.

1700°C Box Furnaces, Large Chamber, Temperature Range 500°C to 1700°C

<table>
<thead>
<tr>
<th>Furnace Model No.</th>
<th>Integrated Digital Control</th>
<th>Electrical Watts</th>
<th>Interior Dimensions</th>
<th>Exterior Dimensions</th>
<th>Ship Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF51634C Digital/1 setpoint</td>
<td>208/240V, 50/60 Hz</td>
<td>5900</td>
<td>9&quot; x 10.5&quot; x 11&quot;</td>
<td>31&quot; x 24&quot; x 28&quot;</td>
<td>350 (159)</td>
</tr>
<tr>
<td>BF51634PC Multi Seg/Multi Prog</td>
<td>208/240V, 50/60 Hz</td>
<td>5900</td>
<td>9&quot; x 10.5&quot; x 11&quot;</td>
<td>31&quot; x 24&quot; x 28&quot;</td>
<td>350 (159)</td>
</tr>
<tr>
<td>BF51634PCOMC Multi Seg/Multi Prog/Com</td>
<td>208/240V, 50/60 Hz</td>
<td>5900</td>
<td>9&quot; x 10.5&quot; x 11&quot;</td>
<td>31&quot; x 24&quot; x 28&quot;</td>
<td>350 (159)</td>
</tr>
<tr>
<td>BF51664C Digital/1 setpoint</td>
<td>208/240V, 50/60 Hz</td>
<td>7100</td>
<td>9&quot; x 15.5&quot; x 11&quot;</td>
<td>31&quot; x 30&quot; x 28&quot;</td>
<td>370 (168)</td>
</tr>
<tr>
<td>BF51664PC Multi Seg/Multi Prog</td>
<td>208/240V, 50/60 Hz</td>
<td>7100</td>
<td>9&quot; x 15.5&quot; x 11&quot;</td>
<td>31&quot; x 30&quot; x 28&quot;</td>
<td>370 (168)</td>
</tr>
<tr>
<td>BF51664PCOMC Multi Seg/Multi Prog/Com</td>
<td>208/240V, 50/60 Hz</td>
<td>7100</td>
<td>9&quot; x 15.5&quot; x 11&quot;</td>
<td>31&quot; x 30&quot; x 28&quot;</td>
<td>370 (168)</td>
</tr>
</tbody>
</table>

Notes: Required power cord and hardwiring are not included.

Heat-Up/Cool-Down Model BF1664C

Actual performance may vary depending on load, chamber size, sample placement, ambient temperature and environmental conditions.
Mini-Mite™ 1100°C Tube Furnaces offer a selection of control instrumentation including multiple segment programmable or single setpoint control. All models feature energy-efficient Moldatherm® insulation for quick heat-up and cool-down.

**Features**
- Compact, portable and lightweight design
- Split-hinge design simplifies loading and unloading
- Main power on/off switch on control panel
- Safety switch disconnects power to heating element when furnace is opened
- Long life type "K" thermocouple

**Digital, Single Setpoint Controller**
- Microprocessor-based self-tuning PID control (proportional, integral, derivative) provides optimum thermal process without overshoot
- Single program, single setpoint, 1 ramp to setpoint
- Adjustable high limit overtemperature protection
- Simultaneous LED display of actual temperature vs. setpoint
- May be configured to display temperature in either °C or °F

**Optional RS485 Digital Communications Port**
- RS485 Digital communications port available as an option. Allows controller to be connected to a PC for remote monitoring and control of the furnace. Up to 30 units can be connected to one PC. Please see page 35 for ordering information and additional options.

**Mini-Mite™ 1100°C Tube Furnaces (Single Zone)**

**Applications**
- Pyrolysis
- Thermal Expansion
- Calibration
- Sintering
- Viscosity Testing
## 1100°C Mini-Mite™ Split-Hinges, Single Zone, Integrated Controller, Temperature Range 100 to 1100°C

<table>
<thead>
<tr>
<th>Furnace Model No.</th>
<th>Electrical Watts</th>
<th>Process Tube Heated Length</th>
<th>Ship Weight</th>
<th>H x F-B x W in” (mm)</th>
<th>Diameter, in” (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Digital, Single Segment Control, 1100°C</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TF55030A</td>
<td>120V, 50/60 Hz</td>
<td>800</td>
<td>1 Segment</td>
<td>15” (381) x 11” (279.4) x 16” (406.4)</td>
<td>1” (25.4)</td>
</tr>
<tr>
<td>TF55030C</td>
<td>208/240V, 50/60 Hz</td>
<td>800</td>
<td>1 Segment</td>
<td>15” (381) x 11” (279.4) x 16” (406.4)</td>
<td>1” (25.4)</td>
</tr>
</tbody>
</table>

| **Digital, Multi Segment Programmable, 1100°C** |
| TF55035A  | 120V, 50/60 Hz | 800 | 16 Segment | 15” (381) x 11” (279.4) x 16” (406.4) | 1” (25.4) |
| TF55035C  | 208/240V, 50/60 Hz | 800 | 16 Segment | 15” (381) x 11” (279.4) x 16” (406.4) | 1” (25.4) |

*Process Tubes* These furnaces are designed for use with a variety of process tubes including alumina, mullite, quartz and metallic. For information on process tubes contact your process tube supplier or call your Lindberg/Blue M sales representative.

**Note:** All models include 10’ power cord.

---

### Uniformity Profile—No Load

**TF55035A Heat-Up/Cool-Down**

<table>
<thead>
<tr>
<th>Heat-up (Min)</th>
<th>Cool-down (Hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>51 01 52 02 53 0</td>
<td>102 3</td>
</tr>
</tbody>
</table>

Heat and cool rates measured in center 1”OD process tube. Ends of tube plugged with ceramic fiber.

---

### Actual performance may vary depending on load, chamber size, sample placement, ambient temperature and environmental conditions.

800-252-7100  www.lindbergbluem.com
Three Zone 1100°C Tube Furnaces have new, energy efficient designs incorporating Lindberg/Blue M exclusive Moldatherm® ceramic fiber insulation. Performance attributes include excellent temperature uniformity, fast heat-up and cool-down, and quick recovery with optimum power consumption. The furnace includes three independent, programmable controllers, one for each zone.

Features

- Innovative use of venting and insulating air spaces to create lower exterior surface temperatures
- Accepts an array of tube adapters (see chart)
- One set of (2) tube adapters included; standard, largest size supplied
- Flexible design, may be used for a variety of applications
- Long-life Type “K” thermocouples

Digital Single Program, Multiple Segment Programmable Controller

- Three programmable controllers, one for each zone
- Microprocessor-based self-tuning PID control (proportional, integral, derivative) provides optimum thermal process without overshoot
- Single program with multiple segments for ramp (up and down) and dwell (timed hold) temperature control. See page 35 for more information
- Adjustable high limit overtemperature protection
- Simultaneous LED display of actual temperature vs. setpoint
- May be configured to display temperature in either °C or °F

Optional RS485 Digital Communications Port

- RS485 Digital communications port available as an option. Allows controller to be connected to a PC for remote monitoring and control of the furnace. Up to 30 units can be connected to one PC. Please see page 35 for ordering information and additional options

Programming control. Each zone programmable for suitable process requirements.

Lindberg/Blue M

Model OSF5546C, Solid Tube, Three-Zone Furnace includes three multiple zone programmable controllers, one for each zone. (Furnace tube shown, not included.)

Applications

- Annealing
- Crystal Growing
- Calibration
- Heat Treating

Three Zone 1100°C Tube Furnaces (Three Zone)

1800-252-7100 www.lindbergblue.com
1100°C Solid, Three Zone, Multi-Segment Integrated Controller, Temperature Range 100°C to 1100°C

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Electrical Watts (W)</th>
<th>Exterior Dimensions H x F-B x W (in)</th>
<th>Process Tube Heated Length (in)</th>
<th>Heated Zone Diameter, in 1Ø</th>
<th>Ship Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>STF55346C</td>
<td>208/240V, 50/60 Hz 3800</td>
<td>21&quot; (533.4) x 17&quot; (431.8) x 35&quot; (889)</td>
<td>24&quot; (609.6)</td>
<td>1&quot; (25.4) to 3&quot; (76.2)</td>
<td>225 (102)</td>
</tr>
<tr>
<td>STF55666C</td>
<td>208/240V, 50/60 Hz 11000</td>
<td>26&quot; (660.4) x 22&quot; (558.8) x 54&quot; (1371.6)</td>
<td>36&quot; (914.4)</td>
<td>3&quot; (76.2) to 6&quot; (152.4)</td>
<td>255 (115)</td>
</tr>
</tbody>
</table>

*Process Tube*: These furnaces are designed for use with a variety of process tubes including alumina, mullite, quartz and metals. For information on process tubes contact your process tube supplier or call your Lindberg/Blue M sales representative.

One set of (2) Tube Adapters included with furnace, larger specified size supplied. See table for additional options.

**Notes**: Required power cord and hardwiring are not included.

---

**Model:** STF55346C Uniformity Profile, 1100°C Tube Furnace, No Load

![Uniformity Profile](image)

**Holding Power 50%**
Tests performed with 3" diameter process tube plugged with ceramic fiber.

---

**Moldatherm® Tube Adapters** (each sold separately)

<table>
<thead>
<tr>
<th>Size</th>
<th>Model STF55346C</th>
<th>Model STF55666C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot;</td>
<td>59941</td>
<td>59941</td>
</tr>
<tr>
<td>2&quot;</td>
<td>59942</td>
<td>59942</td>
</tr>
<tr>
<td>3&quot;</td>
<td>59943</td>
<td>59943</td>
</tr>
<tr>
<td>4&quot;</td>
<td>59944</td>
<td>59944</td>
</tr>
<tr>
<td>5&quot;</td>
<td>59945</td>
<td>59945</td>
</tr>
<tr>
<td>6&quot;</td>
<td>59946</td>
<td>59946</td>
</tr>
</tbody>
</table>

*One set of (2) included with furnace.

---

**Actual performance may vary depending on load, chamber size, sample placement, ambient temperature and environmental conditions.**
Single Zone and Three Zone
Lindberg/Blue M 1200°C split hinge tube furnaces are configurable for horizontal or vertical use. Choose from single zone models of 12” and 24” heated lengths, and three zone models of 24” to 36” heated lengths. Furnaces use independent digital temperature control modules (ordered separately) which are available in standard or programmable options.

Features
- Designed for horizontal or vertical operation
- Patented Moldatherm® LGO® heating element modules for superior radial and linear temperature uniformity, fast heat-up and cool-downs
- Long-life, energy efficient elements require little or no maintenance
- Unique cabinet design achieves lower exterior surface temperature
- Heat reflecting element support assembly creates two highly effective insulating air spaces
- Compact cabinet with high temperature resistant painted finish

Three Zone Models
- Three independent power circuits (zones) with independent thermocouples for control references
- Full adjustment of each zone over entire operating range to 1200°C
- Center zone uniformity achieved and operating length maximized through adjustable profiling of end zones by independent controller
- Temperature uniformity achieved with independent setpoints of end zones higher or lower than center

Applications
- Annealing
- Crystal Growing
- Calibration
- Heat Treating

The split hinge design permits easy observation, fast cooling, convenient placement of the process tube, and overall ease of operation. All models can be used with a variety of ceramic, quartz, or alloy process tubes (customer supplied), diameter to 6” depending on model. One set of tube adapters is included with each model.

The 1200°C Split-Hinge Tube Furnaces accept interchangeable Moldatherm tube adapters. See chart on page 25. Long-life Platinel® II thermocouple(s) with 10’ compensated lead wires and polished plug.

1200°C Split-Hinge Tube Furnaces
Multi-EDT55132C, 1200°C Tube Furnaces, Split Hinge, Single Zone, adaptable for vertical use. Shown right, Three-Zone tube furnace Model EDT55147C (see page 22).
**Model HTF55322C 1200°C Tube Furnace, Single Zone**

- Process tube not included

**1200°C Split Hinge, Horizontal or Vertical Use, Temperature Range 100°C to 1200°C**

<table>
<thead>
<tr>
<th>Furnace Code</th>
<th>Voltage, Hz</th>
<th>Current</th>
<th>H x F x B in&quot; (mm)</th>
<th>Process Tube Heated Length in&quot; (mm)</th>
<th>Ship Weight lbs (kg)</th>
</tr>
</thead>
</table>
| HTF55122A   | 120V, 50/60 Hz | 30      | 10" (254) x 19" (482.6) x 14" (355.6) | 12" (304.8) | 60 (27)
| HTF55322A   | 120V, 50/60 Hz | 30      | 16" (406.4) x 17" (431.8) x 23" (584.2) | 1" (25.4) to 3" (76.2) | 12" (304.8) | 120 (55)
| HTF55342C   | 208/240V, 50/60 Hz | 30      | 16" (406.4) x 17" (431.8) x 35" (889) | 1" (25.4) to 3" (76.2) | 24" (609.6) | 175 (80)

*Process Tubes* - These furnaces are designed for use with a variety of process tubes including alumina, mullite, quartz and metallic.

For information on process tubes contact your process tube supplier or call your Lindberg/Blue M sales representative.

**Tube Adapters** - One set of (2) included with furnace:
- Model HTF55122A: (2) 1" dia. adapters
- Models HTF55322A/C: (2) 2" dia. adapters
- Model HTF55342C: (2) 3" dia. adapters

**Note:** Required power cord, hardwiring and interconnecting wiring are not included.

---

**Controller Digital With Overtemp Control (OTC)**

Adjustable digital overtemperature control, factory-installed on selected control consoles with “B” suffix designation; see chart. Protects furnace and load in the event of primary control circuit failure. Overrides main controller and shuts off power to furnace if high limit is reached. Manual reset required for safety. Operates via magnetic contacts through signal from independent thermocouple.

**Optional RS485 Digital Communications Port**

RS485 Digital communications port available as an option. Allows controller to be connected to a PC for remote monitoring and control of the furnace. Up to 30 units can be connected to one PC. Please see page 35 for ordering information and additional options.
Three Zone

1200°C Split-Hinge, Horizontal or Vertical Use, Temperature Range 100°C to 1200°C

**Controllers**

- Multiple Segment Programmable
- Tube Adapters

**Power Module, On/off Circuit Breaker and Processor-based Digital Control, a Solid-state Control Console Includes Advanced Microprocessor With Digital Display (Dwell)

- Programmable Controllers
- Dwell (timed hold) temperature control.

**Dwell (timed hold) temperature control.**

- Simultaneous LED Display of Actual Temperature vs. Setpoint. May be Configured to Display Temperature in Either °C or °F

**Temperature Control/Protection**

- One Microprocessor-based PID Programmable Controller (Proportional, Integral, Derivative), Single Segment, Single Setpoint, Ramp and Dwell. See Page 35 for More Information.

**Controller**

- Single Zone Program, Multiple Segment Programmable
- Controller for Center Zone

**Option A Overtemperature Control (OTC)**


**Option B Overtemperature Control (OTC)**


**Communications Port**

- Optional RS485 Digital Communications Port

- RS485 Digital Communications Port Available as an Option. Allows Controller to be Connected to a PC for Remote Monitoring and Control of the Furnace. Up to 30 Units Can Be Connected to One PC. Please See Page 35 for Ordering Information and Additional Options.

---

**Additional Features**

- Process Tubes: Three furnaces are designed for use with a variety of process tubes including alumina, mullite, quartz and metal. For information on process tubes contact your process tube supplier or call your Lindberg/Blue M sales representative.

- Tube Adapters: One set of (2) included with furnaces. Model HTF5556°C, (3) dia. adapters. Models HTF5560°C, (3) dia. adapters.

---

**Model No.**

- CC58434C
- CC58434BC
- CC58434BC

**Volts, Hz, 1Ø**

- 208/240V, 50/60Hz
- 208/240V, 50/60Hz
- 208/240V, 50/60Hz

**Amps**

- 20/30/20
- 20/30/20
- 20/30/20

**Controller Digital With**

- With Overtemp

**Electrical Watts**

- Independent

**Maximum Exterior Dimensions**

- (mm)

**Ship Weight**

- (kg)

---

**Furnaces**

- Electrical Watts Independent

**Exterior Dimensions**

- (mm)

**Ship Weight**

- (kg)

---

**Process Tubes**

- One set of (2) included with furnace. Model HTF5556°C, (3) dia. adapters. Models HTF5560°C, (3) dia. adapters.

---

**Control**

- (OTC)

**Option B Overtemperature**

- Control (OTC)
Moldatherm® Tube Adapters (each sold separately)

One set (2) of tube adapters provided with each Lindberg/Blue M furnace. See below for standard tube adapter supplied with each furnace.

Interchangeable individual tube adapters which allow alternative size process tubes are available; see chart.

<table>
<thead>
<tr>
<th>Adapter Size</th>
<th>Single Zone</th>
<th>Model</th>
<th>Three Zone</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.75&quot;</td>
<td>HTF55122</td>
<td>HTF55122</td>
<td>HTF55122</td>
<td></td>
</tr>
<tr>
<td>1&quot;</td>
<td>HTF55322</td>
<td>HTF55322</td>
<td>HTF55322</td>
<td></td>
</tr>
<tr>
<td>1.5&quot;</td>
<td>HTF55342</td>
<td>HTF55342</td>
<td>HTF55342</td>
<td></td>
</tr>
<tr>
<td>2&quot;</td>
<td>HTF55323</td>
<td>HTF55323</td>
<td>HTF55323</td>
<td></td>
</tr>
<tr>
<td>2.5&quot;</td>
<td>HTF55324</td>
<td>HTF55324</td>
<td>HTF55324</td>
<td></td>
</tr>
<tr>
<td>3&quot;</td>
<td>HTF55325</td>
<td>HTF55325</td>
<td>HTF55325</td>
<td></td>
</tr>
<tr>
<td>4&quot;</td>
<td>HTF55326</td>
<td>HTF55326</td>
<td>HTF55326</td>
<td></td>
</tr>
<tr>
<td>5&quot;</td>
<td>HTF55327</td>
<td>HTF55327</td>
<td>HTF55327</td>
<td></td>
</tr>
<tr>
<td>6&quot;</td>
<td>HTF55328</td>
<td>HTF55328</td>
<td>HTF55328</td>
<td></td>
</tr>
<tr>
<td>Blank (Solid)</td>
<td>HTF55329</td>
<td>HTF55329</td>
<td>HTF55329</td>
<td></td>
</tr>
</tbody>
</table>

* One set of (2) included with furnace

Floor Stand, For Vertical Installation

The optional Floor Stand is required to support HTF Series Tube Furnaces in a vertical configuration. Floor stands include all mounting hardware.

Uniformity Profiles, Model HTF55000 Series

Actual performance may vary depending on load, chamber size, sample placement, ambient temperature and environmental conditions.

800-252-7100 www.lindbergblue.com
Heavy duty 1500°C tube furnaces are available in single and three zone models, designed for high temperatures metallurgical, ceramic, chemical and electronic research.

**Features**
- Double-ended silicon carbide heating elements mounted above and below the chamber
- Heating elements with unique right angle bend, sidewall mounting and compressed spacing across delivers fast heat-up and recovery and offset heat loss from end of process tube
- Removable side panels for easy installation and electrical connection, simplified heating element replacement and adjustment
- High temperature insulation with insulated end vestibules for better uniformity and energy efficiency
- Long-life, fast response type “R” thermocouples with 10’ compensated lead wire and polarized plug

**Three Zone Models**
- Three independent power circuits (zones) with independent thermocouples for control reference
- Full adjustment of each zone over entire operating range of 500°C to 1500°C
- Center zone uniformity achieved and operating length maximized through adjustable profiling of end zones by independent controllers
- Controlled temperature uniformity achieved with independent setpoint of end zones higher or lower than center zone

Actual performance may vary depending on load, chamber size, sample placement, ambient temperature and environmental conditions.

800-252-7100 www.lindbergblue.com
Single Zone

1500°C Heavy-Duty Solid Tube Furnace, Temperature Range 500°C to 1500°C

<table>
<thead>
<tr>
<th>Furnace Model No.</th>
<th>Electrical Watts, Volts, Hz, 1Ø</th>
<th>Controller</th>
<th>Exterior Dimensions H x F-B x W in” (mm)</th>
<th>Process Tube Diameter in” (mm)</th>
<th>Heated Length in” (nominal mm)</th>
<th>Ship Weight lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>STF5423SCM</td>
<td>208/240V, 50/60 Hz</td>
<td>CC58125C</td>
<td>10&quot; (254) x 19&quot; (482.6) x 14&quot; (355.6)</td>
<td>2&quot; (50.8)</td>
<td>48 (21)</td>
<td>120 (54)</td>
</tr>
<tr>
<td>STF5435SCM</td>
<td>208/240V, 50/60 Hz</td>
<td>CC58125C</td>
<td>10&quot; (254) x 19&quot; (482.6) x 14&quot; (355.6)</td>
<td>2&quot; (50.8)</td>
<td>72 (33)</td>
<td>180 (82)</td>
</tr>
</tbody>
</table>

*Process Tubes These furnaces are designed for use with a variety of process tubes including alumina, mullite, quartz and metallic. For information on process tubes contact your process tube supplier or call your Lindberg/Blue M sales representative.

Note: Required power cord, hardwiring and interconnecting wiring are not included.

1500°C Digital, Single Setpoint Controller
Control console includes advanced microprocessor-based digital control, a solid-state power module, on/off circuit breaker and thermocouple input jack. Includes microprocessor-based PID control (proportional, integral, derivative), single setpoint, 1 ramp to setpoint. Built-in adjustable high limit overtemperature protection. Simultaneous LED display of actual temperature vs. setpoint. May be configured to display temperature in either °C or °F.

1500°C Digital Single Program, Multiple Segment Programmable Controller
Control console includes advanced microprocessor-based digital control, a solid-state power module, on/off circuit breaker and thermocouple input jack. Includes microprocessor-based PID control (proportional, integral, derivative), single program with multiple segments for ramp (up and down) and dwell (timed hold) temperature control. See page 35 for more information. Built-in adjustable high limit overtemperature protection. Simultaneous LED display of actual temperature vs. setpoint. May be configured to display temperature in either °C or °F.

Option B Overtemperature Control (OTC)
Adjustable digital overtemperature control, factory installed on selected control consoles with “B” suffix designation, see chart. Protects furnace and load in the event of primary control circuit failure. Overrides main controller and shuts off power to furnace if high limit is reached. Manual reset required for safety. Operates via magnetic contacts through signal from independent thermocouple.

Optional RS485 Digital Communications Port
RS485 Digital communications port available as an option. Allows controller to be connected to a PC for remote monitoring and control of the furnace. Up to 30 units can be connected to one PC. Please see page 35 for ordering information and additional options.

Three Zone

1500°C Heavy-Duty Solid Tube Furnace, Temperature Range 500°C to 1500°C

<table>
<thead>
<tr>
<th>Furnace Model No.</th>
<th>Electrical Watts, Volts, Hz, 1Ø</th>
<th>Controller</th>
<th>Independent Controller</th>
<th>Exterior Dimensions H x F-B x W in” (mm)</th>
<th>Process Tube Diameter in” (mm)</th>
<th>Heated Length in” (nominal mm)</th>
<th>Ship Weight lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>STF5437SKC</td>
<td>208/240V, 50/60 Hz</td>
<td>CC58475C</td>
<td>CC58485C</td>
<td>31&quot; (787.4) x 33.5&quot; (850.9) x 37&quot; (939.8)</td>
<td>36/24/6 (914.4/609.6/152.4)</td>
<td>1000 (453)</td>
<td>630 (285)</td>
</tr>
<tr>
<td>STF5477SKC</td>
<td>208/240V, 50/60 Hz</td>
<td>CC58475C</td>
<td>CC58485C</td>
<td>31&quot; (787.4) x 33.5&quot; (850.9) x 49&quot; (1244.6)</td>
<td>48/36/6 (1219.2/914.4/152.4)</td>
<td>1000 (453)</td>
<td>630 (285)</td>
</tr>
</tbody>
</table>

*Process Tubes These furnaces are designed for use with a variety of process tubes including alumina, mullite, quartz and metallic. For information on process tubes contact your process tube supplier or call your Lindberg/Blue M sales representative.

Note: Required power cord, hardwiring and interconnecting wiring are not included. See page 28 for controller specifications.
1900°C Three Zone Controller
Control console is fully wired and includes advanced microprocessor-based digital control, a solid-state power module, on/off circuit breaker and thermocouple input jacks for each zone. Includes three microprocessor-based PID controls (proportional, integral, derivative), single segment, single setpoint, 1 ramp to setpoint. Built-in adjustable high limit overtemperature protection. Simultaneous LED display of actual temperature vs. setpoint. May be configured to display temperatures in either °C or °F.

1500°C Three Zone Single Program, Multiple Segment Programmable Controllers for Center Zone
Control console includes advanced microprocessor-based digital control, a solid-state power module, on/off circuit breaker and thermocouple input jacks for each zone.

Center Zone
One microprocessor-based PID programmable controller (proportional, integral, derivative), single program with multiple segments for ramp (up and down) and dwell (ramp hold) temperature control. See page 55 for more information. Built-in adjustable high limit overtemperature protection. Simultaneous LED display of actual temperature vs. setpoint. Operates via magnetic contacts through signal from independent thermocouple.

Option B Overtemperature Control (OTC)
Adjustable digital overtemperature control, factory installed on selected control consoles with “B” suffix designation; see chart. Protects furnace and load in the event of primary control circuit failure. Overrides main controller, and shuts off power to furnace if high limit is reached. Manual reset required for safety.

Optional RS485 Digital Communications Port
RS485 Digital communications port available as an option. Allows controller to be connected to a PC for remote monitoring and control of the furnace. Up to 30 units can be connected to one PC. Please see page 35 for ordering information and additional options.

1500°C Three Zone Single Program, Multiple Segment Programmable Controllers
Control console includes advanced microprocessor-based digital control, a solid-state power module, on/off circuit breaker and thermocouple input jack for each zone. Includes three microprocessor-based PID programmable controllers (proportional, integral, derivative), single program with multiple segments for ramp (up and down) and dwell (ramp hold) temperature control. See page 55 for more information. Built-in adjustable high limit overtemperature protection. Simultaneous LED display of actual temperature vs. setpoint. May be configured to display temperatures in either °C or °F.

Option B Overtemperature Control (OTC)
Adjustable digital overtemperature control, factory installed on selected control consoles with “B” suffix designation; see chart. Protects furnace and load in the event of primary control circuit failure. Overrides main controller and shuts off power to furnace if high limit is reached. Manual reset required for safety. Operates via magnetic contacts through signal from independent thermocouple.

Controller Digital With Overtemp

<table>
<thead>
<tr>
<th>Controller Model No.</th>
<th>Digital</th>
<th>With Programmer</th>
<th>With Overtemp Control</th>
<th>Electrical Volts, Hz, 1Ø</th>
<th>Maximum Amps</th>
<th>Exterior Dimensions H x F-B x W in&quot; (mm)</th>
<th>Ship Weight lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C65A475C</td>
<td></td>
<td></td>
<td></td>
<td>208/240V, 50/60Hz</td>
<td>3050/30</td>
<td>17&quot; (431.8) x 24&quot; (615.4) x 17&quot; (431.8)</td>
<td>70 (32)</td>
</tr>
<tr>
<td>C65A490C</td>
<td></td>
<td></td>
<td></td>
<td>208/240V, 50/60Hz</td>
<td>3050/30</td>
<td>17&quot; (431.8) x 24&quot; (615.4) x 24&quot; (609.6)</td>
<td>80 (37)</td>
</tr>
</tbody>
</table>

With Overtemp Control

<table>
<thead>
<tr>
<th>Controller Model No.</th>
<th>Digital</th>
<th>With Programmer</th>
<th>With Overtemp Control</th>
<th>Electrical Volts, Hz, 1Ø</th>
<th>Maximum Amps</th>
<th>Exterior Dimensions H x F-B x W in&quot; (mm)</th>
<th>Ship Weight lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G53A475PRC</td>
<td></td>
<td></td>
<td></td>
<td>208/240V, 50/60Hz</td>
<td>3050/30</td>
<td>17&quot; (431.8) x 24&quot; (615.4) x 17&quot; (431.8)</td>
<td>70 (32)</td>
</tr>
<tr>
<td>G53A490PRC</td>
<td></td>
<td></td>
<td></td>
<td>208/240V, 50/60Hz</td>
<td>3050/30</td>
<td>17&quot; (431.8) x 24&quot; (615.4) x 24&quot; (609.6)</td>
<td>80 (37)</td>
</tr>
</tbody>
</table>

1500°C Three Zone Single Program, Multiple Segment Programmable Controllers
Control console includes advanced microprocessor-based digital control, a solid-state power module, on/off circuit breaker and thermocouple input jacks for each zone. Includes three microprocessor-based PID programmable controllers (proportional, integral, derivative), single program with multiple segments for ramp (up and down) and dwell (ramp hold) temperature control. See page 55 for more information. Built-in adjustable high limit overtemperature protection. Simultaneous LED display of actual temperature vs. setpoint. May be configured to display temperatures in either °C or °F.

Option B Overtemperature Control (OTC)
Adjustable digital overtemperature control, factory installed on selected control consoles with “B” suffix designation; see chart. Protects furnace and load in the event of primary control circuit failure. Overrides main controller and shuts off power to furnace if high limit is reached. Manual reset required for safety. Operates via magnetic contacts through signal from independent thermocouple.

Optional RS485 Digital Communications Port
RS485 Digital communications port available as an option. Allows controller to be connected to a PC for remote monitoring and control of the furnace. Up to 30 units can be connected to one PC. Please see page 35 for ordering information and additional options.

Controller Digital With Overtemp

<table>
<thead>
<tr>
<th>Controller Model No.</th>
<th>Digital</th>
<th>With Programmer</th>
<th>With Overtemp Control</th>
<th>Electrical Volts, Hz, 1Ø</th>
<th>Maximum Amps</th>
<th>Exterior Dimensions H x F-B x W in&quot; (mm)</th>
<th>Ship Weight lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G53A675PRC</td>
<td></td>
<td></td>
<td></td>
<td>208/240V, 50/60Hz</td>
<td>3050/30</td>
<td>17&quot; (431.8) x 24&quot; (615.4) x 17&quot; (431.8)</td>
<td>90 (41)</td>
</tr>
<tr>
<td>G53A690PRC</td>
<td></td>
<td></td>
<td></td>
<td>208/240V, 50/60Hz</td>
<td>3050/30</td>
<td>17&quot; (431.8) x 24&quot; (615.4) x 24&quot; (609.6)</td>
<td>100 (45)</td>
</tr>
</tbody>
</table>

Note: Required power cord, hardwiring and interconnecting wiring are not included.

800-252-7100 www.lindbergblue.com
1500°C General Purpose Tube Furnaces (Integral Control)

1500°C General Purpose Tube Furnaces with integral control are designed for a range of applications which require processing flexibility with fast heat-up and recovery. Energy efficient Moldatherm® insulation increases temperature uniformity, improves energy efficiency and helps to maintain low exterior cabinet temperatures during operation.

Features
- Accommodates 1", 2" and 3" O.D. process tubes (customer supplied)
- Silicon carbide heating elements positioned above and below tube and Type "R" thermocouple combine to maintain temperature stability at 1500°C
- Microprocessor-based PID programmable control (proportional, integral, derivative) prevents overshoot
- Digital Single Program, Multiple Segment Programmable Controller
  - Single program with multiple segments for ramp (up and down) and dwell (timed hold) temperature control. See page 35 for more information
  - Adjustable high limit overtemperature protection
  - Adjustable digital overtemperature control, protects furnace and load in the event of primary control circuit failure. Available on selected models with "B" suffix designation; see chart
  - LED display of actual temperature vs. setpoint
  - May be configured to display temperature in either °C or °F

Digital Multiple Program, Multiple Segment Programmable Controller
- Multiple programs and segments for ramp (up and down) and dwell (timed hold) temperature control. See page 35 for more information
- Adjustable high limit overtemperature protection
- LED display of actual temperature
- May be configured to display temperature in either °C or °F

Option B Overtemperature Control (OTC)
- Adjustable digital overtemperature control, protects furnace and load in the event of primary control circuit failure. Available on selected models with "B" suffix designation; see chart

Optional RS485 Digital Communications Port
- RS485 Digital communications port available as an option. Allows controller to be connected to a PC for remote monitoring and control of the furnace. Up to 30 units can be connected to one PC. Please see page 35 for ordering information and additional options

1500°C Solid, Integral Controller, Temperature Range 500°C to 1500°C

<table>
<thead>
<tr>
<th>Furnace Model No.</th>
<th>Electrical Watts</th>
<th>Integrated Controller</th>
<th>Exterior Dimension H x F x W in&quot; (mm)</th>
<th>Process Tube Diameter, in&quot; (mm)</th>
<th>Heated Length in&quot; (mm)</th>
<th>Ship Weight lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>STF55433C</td>
<td>6000</td>
<td>Multi Seg/1 Prog</td>
<td>17&quot; (431.8) x 19&quot; (482.6) x 23&quot; (584.2)</td>
<td>1&quot; (25.4) x 12&quot; (304.8)</td>
<td>12&quot; (304.8)</td>
<td>270 (123)</td>
</tr>
<tr>
<td>STF55433PC</td>
<td>6000</td>
<td>Multi Seg/Multi Prog</td>
<td>17&quot; (431.8) x 19&quot; (482.6) x 23&quot; (584.2)</td>
<td>1&quot; (25.4) x 12&quot; (304.8)</td>
<td>12&quot; (304.8)</td>
<td>270 (123)</td>
</tr>
<tr>
<td>STF55433PBC</td>
<td>6000</td>
<td>Multi Seg/Multi Prog/OTC</td>
<td>17&quot; (431.8) x 19&quot; (482.6) x 23&quot; (584.2)</td>
<td>1&quot; (25.4) x 12&quot; (304.8)</td>
<td>12&quot; (304.8)</td>
<td>270 (123)</td>
</tr>
</tbody>
</table>

Process Tubes: These furnaces are designed for use with a variety of process tubes including alumina, mullite, quartz and metallic. For information on process tubes contact your process tube supplier or call your Lindberg/Blue M sales representative.

Tube Adapters: One set of (2) 2" dia. adapters included with furnace. Note: Required power cord and hardwiring are not included.

800-252-7100 www.lindbergblue.com
High temperature tube furnaces achieve excellent temperature uniformity at 1700°C with rapid heat-up, recovery and cool-down. Moldatherm® graduated density insulation adds to safety and performance by forming enhanced insulation protection between the high temperature chamber and exterior cabinet surface. Moldatherm® graduated density insulation, combined with molybdenum disilicide heating elements, provide superior radial and linear temperature uniformity with resistance to thermal shock. The independent digital temperature control (ordered separately) has multiple programmable segments useful for a wide range of applications.

**Features**

- Heating elements tolerate rapid cycling every extended periods, elements are easily replaceable without the need to match resistance values.
- Heating elements are sidewall mounted to protect integrity of chamber roof; roof penetrations are avoided.
- Type “B” thermocouples assure accurate temperature measurement and long thermocouple life; 10’ compensated lead wire with polarized plug included.
- Moldatherm end vestibules accept 5” O.D. process tube (customer supplied).
- Optional Moldatherm vestibule permits operation with 1”, 2” and 3” O.D. process tube for increased versatility.
- Double shell construction and convection cooling design reduce exterior surface temperatures.
- Removable louvered panels provide easier access to heating elements and thermocouples.

**1700°C High Temperature Tube Furnaces (Independent Control)**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Electrical Watts</th>
<th>Controller</th>
<th>Exterior Dimensions H x P x W (in)</th>
<th>Process Tube Diameter, in</th>
<th>Heated Length, in</th>
<th>Ship Weight, lbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>STF54434C</td>
<td>5000</td>
<td>CC59256PCOMC</td>
<td>19 x 16 x 22 (482.6 x 406.4 x 558.8)</td>
<td>3 (76.2)</td>
<td>12 (304.8)</td>
<td>95 (43)</td>
</tr>
<tr>
<td>STF54454C</td>
<td>10000</td>
<td>CC59256PCOM2CKT</td>
<td>19 x 16 x 34 (482.6 x 406.4 x 863.6)</td>
<td>3 (76.2)</td>
<td>24 (609.6)</td>
<td>165 (75)</td>
</tr>
</tbody>
</table>

**Applications**

- Atmosphere Processing
- Sintering
- Annealing
- Crystal Growing
- Heat Treating

**Process Tubes**

These furnaces are designed for use with a variety of process tubes including alumina, mullite, quartz and metallic. For information on process tubes contact your process tube supplier or call your Lindberg/Blue M sales representative.

**Vestibule Set**

One 3” vestibule set and sleeves included; other size vestibule sets and sleeves may be ordered separately.

Lindberg/Blue M
800-252-7100
www.lindbergbluem.com

Moldatherm graduated density insulation adds to safety and performance by forming enhanced insulation protection between the high temperature chamber and exterior cabinet surface.
1700°C Controller, Programmable, With Communications

Lindberg/Blue M 1700°C Programmable Controllers provide multiple programs and multiple segments for ramp (up and down) and dwell (timed hold) temperature control. The controller visually displays ramp rate, dwell time, program segment and percent power output. A holdback feature allows the operator to set a "process vs setpoint" temperature value which, when exceeded, holds the program to allow the process to catch up. Please see page 35 for additional information.

The controller includes a selectable self-tuning feature which sets the best PID settings for the thermal process. Two digital displays simultaneously indicate actual temperature and setpoint temperatures. High limit overtemperature protection is included. The control console includes a circuit breaker, power module, transformer and cooling fans. Controls include RS485 data port (communications card and port) for connection to remote computer. Intrinsically safe, microprocessor controlled system transfer all instrument control and configuration parameters. Up to 30 units can be connected to one PC. Software is not included, but is available as an option. Please see page 35 for additional options and information.

The controller includes a selectable self-tuning feature which sets the best PID settings for the thermal process. Two digital displays simultaneously indicate actual temperature and setpoint temperatures. High limit overtemperature protection is included. The control console includes a circuit breaker, power module, transformer and cooling fans. Controls include RS485 data port (communications card and port) for connection to remote computer. Intrinsically safe, microprocessor controlled system transfer all instrument control and configuration parameters. Up to 30 units can be connected to one PC. Software is not included, but is available as an option. Please see page 35 for additional options and information.

Option B Overtemperature Control (OTC)

Adjustable digital overtemperature control, factory installed on selected control consoles with "B" suffix designation, see chart. Protects furnace and load in the event of primary control circuit failure. Overrides main controller and shuts off power to furnace if high limit is reached. Manual reset required for safety. Operates via magnetic contacts through signal from independent thermometer.

Vestibules

Optional Moldatherm® vestibules permit operation with 1", 2" and 3" O.D. process tubes for increased versatility. Two vestibules are required for each furnace. One 3" vestibule set is included and installed with each furnace.

Moldatherm Sleeves

Tube sleeves may be placed over customer supplied process tubes to reduce thermal shock to the process tube. Sleeves must be ordered separately. All tube sleeves are 3" long. Actual performance may vary depending on load, chamber size, sample placement, ambient temperature and environmental conditions.

<table>
<thead>
<tr>
<th>Vestibule Catalog No. (Ordered Separately)</th>
<th>1&quot; dia.</th>
<th>2&quot; dia.</th>
<th>3&quot; dia.</th>
</tr>
</thead>
<tbody>
<tr>
<td>STF54434C</td>
<td>729-2147-001</td>
<td>729-2147-002</td>
<td>729-2147-003</td>
</tr>
<tr>
<td>STF54454C</td>
<td>729-2147-013</td>
<td>729-2147-014</td>
<td>729-2147-015</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sleeve Catalog No. (Ordered Separately)</th>
<th>1&quot; dia.</th>
<th>2&quot; dia.</th>
<th>3&quot; dia.</th>
</tr>
</thead>
<tbody>
<tr>
<td>STF54434C</td>
<td>729-2134-001</td>
<td>729-2134-002</td>
<td>729-2134-003</td>
</tr>
<tr>
<td>STF54454C</td>
<td>729-2134-013</td>
<td>729-2134-014</td>
<td>729-2134-015</td>
</tr>
</tbody>
</table>

* One set of (2) included with furnace
1200°C Crucible furnaces are ideal for use in ceramics, electronics, glass, metallurgy and superconductor materials research. These models require independent controllers (ordered separately).

**Features**
- Requires independent controller (ordered separately; see chart)
- Unitized heating and insulation element with helical wire coil embedded in Moldatherm® insulation for maximum heat transfer to the work load
- Cover plug with Moldatherm insulation and handle for safe removal
- Moldatherm insulation protects vestibule, improves energy efficiency
- Platinel® thermocouple with 10' compensated lead wire and polarized plug for long life and accurate temperature measurement
- Moldatherm ceramic fiber hearthplate supports load and protects furnace from spillage

**Applications**
- Melting
- Annealing
- Heat Treating

**Model CF56622C Crucible Furnace.**

**Model CC58114C Controller.**

800-252-7100 www.lindbergblue.com
**1200°C Digital, Single Setpoint Controller**

Control console includes advanced microprocessor-based digital control, a solid-state power module, on/off circuit breaker and thermocouple input jack. Includes microprocessor-based PID control (proportional, integral, derivative), single segment, single setpoint, 1 ramp to setpoint. Built-in adjustable high limit overtemperature protection. Simultaneous LED display of actual temperature vs. setpoint. May be configured to display temperature in either °C or °F.

**1200°C Digital Single Program, Multiple Segment Programmable Controller**

Control console is fully wired and includes advanced microprocessor-based digital control, a solid-state power module, on/off circuit breaker and thermocouple input jack. Includes microprocessor-based PID control (proportional, integral, derivative), single program with multiple segments for ramp (up and down) and dwell (timed hold) temperature control. See page 35 for more information. Built-in adjustable high limit overtemperature protection. Simultaneous LED display of actual temperature vs. setpoint. May be configured to display temperature in either °C or °F.

**Option B Overtemperature Control (OTC)**

Adjustable digital overtemperature control, factory installed on selected control consoles with “B” suffix designation; see chart. Protects furnace and load in the event of primary control circuit failure. Overrides main controller and shuts off power to furnace if high limit is reached. Manual reset required for safety. Operates via magnetic contact through signal from independent thermocouple.

**Optional RS485 Digital Communications Port**

RS485 Digital communications port available as an option. Allows controller to be connected to a PC, for remote monitoring and control of the furnace. Up to 30 units can be connected to one PC. Please see page 35 for ordering information and additional options.

---

Crucible Furnaces, 1200°C, Independent Control, Temperature Range 100°C to 1200°C

<table>
<thead>
<tr>
<th>Furnace Model No.</th>
<th>Electrical Volts, Hz</th>
<th>Watts</th>
<th>Temp Controller</th>
<th>Top Opening ID inches (mm)</th>
<th>Chamber Depth inches (mm)</th>
<th>Exterior Dimensions H x F-B x W in” (mm)</th>
<th>Ship Weight lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF56622C</td>
<td>208/240, 50/60Hz</td>
<td>1700</td>
<td>CC58114C</td>
<td>5” (127)</td>
<td>F (203.2)</td>
<td>16” (406.4) x 15” (381) x 15” (381)</td>
<td>52 (24)</td>
</tr>
<tr>
<td>CF56822C</td>
<td>208/240, 50/60Hz</td>
<td>2600</td>
<td>CC58114C</td>
<td>7.5” (190.5)</td>
<td>F (203.2)</td>
<td>19” (482.6) x 20” (508) x 20” (508)</td>
<td>105 (48)</td>
</tr>
</tbody>
</table>

Crucibles: These furnaces are designed for use with a variety of crucibles including alumina, mullite, quartz and metallic. For information on crucible contact your crucible supplier or call your Lindberg/Blue M sales representative.

Note: Required power cord, hardwiring and interconnecting wiring are not included.

---

**1000°C Digital, Single Setpoint Controller**

Control console includes advanced microprocessor-based digital control, a solid-state power module, on/off circuit breaker and thermocouple input jack. Includes microprocessor-based PID control (proportional, integral, derivative), single program with multiple segments for ramp (up and down) and dwell (timed hold) temperature control. See page 35 for more information. Built-in adjustable high limit overtemperature protection. Simultaneous LED display of actual temperature vs. setpoint. May be configured to display temperature in either °C or °F.

**1000°C Digital Single Program, Multiple Segment Programmable Controller**

Control console is fully wired and includes advanced microprocessor-based digital control, a solid-state power module, on/off circuit breaker and thermocouple input jack. Includes microprocessor-based PID control (proportional, integral, derivative), single program with multiple segments for ramp (up and down) and dwell (timed hold) temperature control. See page 35 for more information. Built-in adjustable high limit overtemperature protection. Simultaneous LED display of actual temperature vs. setpoint. May be configured to display temperature in either °C or °F.

---

Controller Model No. Digital With Programmer With Overtemp Control Electrical Volts, Hz Maximum Amps Exterior Dimensions H x F-B x W in” (mm) Ship Weight lbs (kg)

<table>
<thead>
<tr>
<th>Controller Model No.</th>
<th>Digital With Programmer</th>
<th>With Overtemp Control</th>
<th>Electrical Volts, Hz</th>
<th>Maximum Amps</th>
<th>Exterior Dimensions H x F-B x W in” (mm)</th>
<th>Ship Weight lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC56114B</td>
<td>■</td>
<td>■</td>
<td>208/240, 50/60Hz</td>
<td>30</td>
<td>10” (254) x 9” (228.6) x 14” (355.6)</td>
<td>35 (16)</td>
</tr>
<tr>
<td>With Programmer</td>
<td></td>
<td></td>
<td>208/240, 50/60Hz</td>
<td>30</td>
<td>10” (254) x 9” (228.6) x 14” (355.6)</td>
<td>35 (16)</td>
</tr>
<tr>
<td>With Overtemp Control</td>
<td>■</td>
<td>■</td>
<td>208/240, 50/60Hz</td>
<td>30</td>
<td>10” (254) x 9” (228.6) x 14” (355.6)</td>
<td>35 (16)</td>
</tr>
<tr>
<td>CC56114BC</td>
<td>■</td>
<td>■</td>
<td>208/240, 50/60Hz</td>
<td>30</td>
<td>10” (254) x 9” (228.6) x 14” (355.6)</td>
<td>40 (18)</td>
</tr>
<tr>
<td>CC56114PC</td>
<td>■</td>
<td>■</td>
<td>208/240, 50/60Hz</td>
<td>30</td>
<td>10” (254) x 9” (228.6) x 14” (355.6)</td>
<td>40 (18)</td>
</tr>
</tbody>
</table>

---

Actual performance may vary depending on load, chamber size, sample placement, ambient temperature and environmental conditions.

Lindberg/Blue M

800-252-7100 www.lindbergbluem.com
The Model CF56724C Crucible Furnace is used for high temperature research under three methods of processing: air, controlled atmosphere, or vertical tube orientation using an interchangeable vestibule as an insulating sleeve (which requires a vertical tube adaptation kit). Graduated density Moldatherm® insulation combined with a unique right-angle bend heating element, sidewall mounted, delivers excellent chamber uniformity, fast heat-up and recovery, and energy conserving performance.

**1700°C Features**
- Requires independent controller (ordered separately, see chart)
- Chamber is accessed by top or bottom with manually operated lifting mechanism; work load may be raised and lowered with convenience and safety
- Long-life molybdenum disilicide heating elements resist thermal shock, withstand rapid cycling over extended periods
- Individual elements easily replaceable without matching resistance values
- Elements mounted on four sides of chamber for fast response and recovery
- Forced-air blowers circulate ambient air throughout the double-wall crucible cabinet to minimize exterior surface temperature
- Long-life Type “B” thermocouple for accurate high temperature measurement. Includes 10’ compensated lead wire with polarized plug

**Applications**
- Sintering
- Melting
- Annealing
- Atmosphere Processing

**1700°C Crucible Furnace, Top or Bottom Loading**

The Model CF56724C Crucible Furnace is used for high temperature research under three methods of processing: air, controlled atmosphere, or vertical tube orientation using an interchangeable vestibule as an insulating sleeve (which requires a vertical tube adaptation kit). Graduated density Moldatherm® insulation combined with a unique right-angle bend heating element, sidewall mounted, delivers excellent chamber uniformity, fast heat-up and recovery, and energy conserving performance.

Actual performance may vary depending on load, chamber size, sample placement, ambient temperature and environmental conditions.

LINDBERG/BLUE®
800-252-7100 www.lindbergblue.com
Crucible Furnaces, 1700°C, Independent Control, Temperature Range 500°C to 1700°C, 5,000 Watts

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Voltage, Hz</th>
<th>Controller</th>
<th>Vestibule Top Opening ID in'' (mm)</th>
<th>Vestibule Bottom Opening ID in'' (mm)</th>
<th>Working Depth ID in'' (mm)</th>
<th>Exterior Dimensions H x F x B x W in'' (mm)</th>
<th>Ship Weight No (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF56724</td>
<td>208/240V, 50/60Hz</td>
<td>CC59256PCOMC</td>
<td>6.5'' (165.1 mm)</td>
<td>5'' (127 mm)</td>
<td>6.5'' (165.1 mm)</td>
<td>35.5'' (901.7) x 20'' (508) x 19.5'' (495.3)</td>
<td>250 (114)</td>
</tr>
</tbody>
</table>

Note: Required power cord, hardwiring and interconnecting wiring are not included.

1700°C Controller, Programmable, With Communications
Lindberg/Blue M 1700°C Programmable Controllers provide multiple programs and multiple segments for ramp (up and down) and dwell (set and hold) temperature control. The controller visually displays ramp rate, dwell time, program segment and percent power output. A field installed kit allows the operator to set a "process vs setpoint" temperature value which, when exceeded, holds the program to allow the process to catch up. Please see page 35 for additional information.

The controller includes a selectable self-tuning feature which sets the best PID settings for the thermal process. Two digital displays simultaneously indicate actual temperature and setpoint temperature. High-limit overtemperature protection is standard. The control console includes a circuit breaker, power modules, transformer and cooling fans. Controllers include RS485 data port (communications card and port) for connection to remote computer, allowing modification, interrogation and data transfer of all instrument control and configuration parameters. Up to 30 units can be connected to one PC. Software is not included, but is available as an option. Please see page 35 for additional options and information.

Controller Digital With Programmer With Overtemp Controller Electrical Volts, Hz Exterior Dimensions H x F x B x W in'' (mm) Ship Weight No (kg)
CC59256PCOMC II 208/240V, 50/60Hz 10'' (254) x 15'' (381) x 21'' (533.4) 130 (59)
CC59256PCOMC II 208/240V, 50/60Hz 10'' (254) x 15'' (381) x 21'' (533.4) 130 (59)

Chamber uniformity over center 5.5'' heated chamber length is ±1˚C at 1700˚C (no atmosphere).

Processing Options
In addition to air processing, the 1700°C crucible furnace can be used for atmosphere processing using an internal ceramic crucible (muffle) forming a muffle. Inert gas is supplied through inlet and outlet tubes (customer supplied). Gas flow is controlled via an adjustable N₂ flowmeter, included.

For use in a vertical tube configuration, either air or controlled atmosphere processing, the furnace requires an optional Adaptation Kit (see chart) ordered to match the size of the desired process tube (customer supplied).

Vertical Tube Adaption Kit
The Vertical Tube Adaption Kit creates a 1700°C tube furnace with air or inert atmosphere control using the Model CF56724C crucible furnace as the heating source. Each field installed kit (see ordering chart) is selected based on intended process tube size, and includes two tubes, two tube insulating sleeves (B) with cover plates (C) and end plugs (A). Contact your Lindberg/Blue M sales representative for more information.

LINDBERG/BLUE
Solid-State Control Models

- Solid-state electronic controls deliver rapid heat-up, precise control and exceptional reliability
- Moldatherm® insulated/heating element modules with extremely low thermal mass optimize energy use, reduce maintenance and accelerate heat-up and cool-down
- Unique helically coiled heating element and heat-resistant top-plate configuration combine to create uniform top-plate temperatures

- Independent On/Off switch
- Adjustable temperature control dial with red power ON and amber power APPLIED indicator lights
- Heavy-gauge top-plate is mounted securely to a reinforced steel base; a high temperature painted finish resists wear
- 10’ power cord included

On/Off Control Models, HP53005 Series

- Three On/Off toggle switches mounted on the main control panel control each of three independent heating elements

Hot Plates, 400°C, Solid-State Control

<table>
<thead>
<tr>
<th>Hot Plate Model No.</th>
<th>Top Plate</th>
<th>Electrical</th>
<th>Volts, Hz, 1Ø</th>
<th>Watts</th>
<th>Temp</th>
<th>Plate Working Surface</th>
<th>Overall Height</th>
<th>Ship Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP53025</td>
<td>N/A</td>
<td>120V, 50/60 Hz</td>
<td>1800</td>
<td>124°F (51°C) x 169°F (75°C)</td>
<td>6.5” (165.1)</td>
<td>20 (9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HP53016</td>
<td>1/4”</td>
<td>120V, 50/60 Hz</td>
<td>1800</td>
<td>124°F (51°C) x 169°F (75°C)</td>
<td>6.5” (165.1)</td>
<td>20 (9)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Unique placement of heating elements provides uniform temperatures over top plate surface at each of three settings
- Low-thermal conductivity insulation optimizes energy use, accelerates heat-up and cool-down
- Moldatherm insulation helps control heating elements in place, elements provide direct radiant heat to top plate
- Heat-resistant alloy top plate is attached to reinforced steel base; a high temperature painted finish resists wear

Applications

- Heating
- Boiling
- Drying
- Evaporating
- Digesting

Hot Plates, 400°C, 3-Switch On/Off Control

<table>
<thead>
<tr>
<th>Hot Plate Model No.</th>
<th>Top Plate</th>
<th>Electrical</th>
<th>Low Temp/Watts</th>
<th>Medium Temp/Watts</th>
<th>High Temp/Watts</th>
<th>Plate Working Surface</th>
<th>Overall Height</th>
<th>Ship Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP53025A*</td>
<td>N/A</td>
<td>120V, 50/60 Hz</td>
<td>124°F (51°C) x 169°F (75°C)</td>
<td>6.5” (165.1)</td>
<td>20 (9)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Required power cord and hardwiring are not included.

Lindberg/Blue
800-252-7100 www.lindbergblue.com
Controllers & Accessories

Digital Single Program, Multiple Segment Programmable Controller
- Single program with 16 segments for ramp (up and down) and dwell (timed hold) temperature control
- PID based control
- Simultaneous LED display of actual temperature vs. setpoint
- Super Control (Fuzzy Logic) suppresses overshoots of temperature
- Customer initiated Auto-Tune function will adjust and update the PID parameters to the optimum settings for new temperature setpoints
- 1/16 DIN controller
- Accuracy of controller: ±0.5%
- RS485 digital communications port available as an option

Digital Multiple Program, Multiple Segment Programmable Controller
- 30 programs and 300 segments for ramp (up and down) and dwell (timed hold) temperature control (maximum of 99 segments per program)
- Program patterns can be based on either time or rate
- PID based control
- Large 5-digit LED display of actual temperature
- LCD display provides trend recording function, graphic prompts, configurable display data and custom messages (set by customer)
- Eight PID settings per segment
- 1/4 DIN controller
- Accuracy of controller: ±0.1%
- RS485 digital communications port available as an option

RS485 Digital Communications Port

Digital Communications Features
- Provides two-way communications between furnace and remote computer (accessory #7043 required). Computer not included.
- Allows remote monitoring and control of furnace equipment.
- Ability to connect up to 30 furnaces to one personal computer.
- 9-pin connection ports.
- Compatible with SPECVIEW PLUS™ and most communications software packages.

SPECVIEW PLUS™ Software Features
- Automatic Configuration
- Data logging of any variable with historic screen display
- Trend Charts
- Parameter Access to setpoints and high limits can be changed from PC
- Monitors and controls up to 30 furnaces with one software package

RS-485 Ordering Information
To add RS-485 Digital Communications Port to Furnace or Control Console model, add “COM” to model number before last letter in model number (see examples below). Please contact your Lindberg/Blue M sales representative for pricing and lead times.

<table>
<thead>
<tr>
<th>Old Part#</th>
<th>New Part#</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF51842C</td>
<td>BF51842COMC</td>
</tr>
<tr>
<td>BF51433PBC</td>
<td>BF51433PBCOMC</td>
</tr>
<tr>
<td>CC58114C</td>
<td>CC58114COMC</td>
</tr>
<tr>
<td>CC58125BC</td>
<td>CC58125BCOMC</td>
</tr>
</tbody>
</table>

Twenty-five foot cable and RS-232 converter for connection of furnace/control console RS-485 port to personal computer serial port. Required for first unit connection.

Accessory No. 7043
Cable to connect multiple (2+) furnaces, ovens or other equipment with Yokogawa communications capabilities to first furnace with Yokogawa RS-485 communications port.

Accessory No. 7044
SPECVIEW PLUS software package includes disc and instructional book.

Accessory No. 7046
Thermo Electron Corporation manufactures a wide range of laboratory ovens, furnaces, water baths and allied controlled environment equipment. Factory installed options and product modifications are available and must be specified when ordering.

Contact your Thermo Electron Sales Representative for more information on these and other high performance laboratory products.

All published dimensions, performance data are nominal. Specifications are subject to change without notice.

For Ordering or Technical Information

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