

Industrial Ovens

**Pre-engineered
chambers for
handling
hazardous
materials.**



The ovens in this brochure meet the highest performance standards and cover a broad range of application requirements.



Blue M



Blue M

SAFETY OVENS

- ◆ Designed to satisfy the most challenging applications
- ◆ Our engineered-to-order skills can accommodate your unique requirements

Other fine Blue M products:



921



ETCU-001



931



LB-102

LB-104

LB-106

OVEN SAFETY

Hazardous oven applications

Any chamber application is considered hazardous where the workload being heated can combine with the atmosphere around it to produce an explosive mixture such as when working with paints, lacquers, solvents, and similar materials.

There are two basic classifications of hazardous atmospheres that affect chamber selection.

- **Class I involves atmospheres containing flammable gases or vapors.**

- **Class II pertains to atmospheres containing combustible dust.**

Atmospheres containing solvents normally used in finishing are classified specifically as Class I, Group D.

This classification means that an area has enough flammable Group D solvent vapors present to produce an ignitable mixture in the atmosphere.

Any electrical device or wiring in such an area must be totally enclosed in a suitable enclosure. It must be strong enough to withstand an explosion ignited internally by an electrical spark and can not disintegrate or allow a flame to reach the external atmosphere. In addition, no exposed surface of the enclosure can exceed +215°C, the auto-ignition temperature of the lowest of Group D solvents.

The current standard covering chamber safety features is found in the National Fire Codes prepared by the National Fire Protection Association (NFPA). This includes:

- Bulletin 70, National Electrical Code
- Bulletin 86, Class A Ovens and Furnaces

NFPA fire codes

These are advisory documents that have been adopted in whole or in part by various city and state governmental codes, insurance agencies (such as I.R.I. – Industrial Risk Insurance and F.M.– Factory Mutual), and by OSHA. But, there is no formally OSHA-approved or I.R.I.-approved oven on the market.

Compliance procedure

An oven buyer must define the hazardous material to be processed and determine the volatile load that must be processed.

The chamber manufacturer must define the specific unit offered for the application and its safety features, wiring diagram, and exhaust rates.

The chambers mentioned in this brochure are designed for specific kinds of hazardous work. If you have any questions regarding ovens for a hazardous application, please let us know.

You will find that Blue M Electric has the ovens, resources, and technological know-how necessary to meet your requirements.

NFPA Bulletin 86

Blue M standard chamber safety features

- 1. Chamber.** Interior chamber seams are heli-arc welded vapor tight to prevent fume infiltration into the insulated walls. Without proper sealing, fumes will condense on insulation and could ignite.
- 2. Purge timer and door switch.** These devices are provided to prevent element heat up and allow exhaust blowers to run for preset time after every door opening. This clears excessive fumes from the chamber before energizing a possible ignition source, e.g., the heating elements or an electrical fault that may create an arc inside the chamber.

The system operates automatically any time the chamber door is opened or a power failure occurs.

- 3. Blowout relief panel.** The panel provides one square foot area per 15 cubic feet of chamber volume. The panel will blow out and relieve internal chamber pressure if a low-level explosion occurs, minimizing possible damage.

- 4. Overtemperature protection.** Preventing uncontrolled temperature rise is imperative. This protection device is independent of the primary control circuit and includes its own contactor to disconnect the main chamber power line.

- 5. Forced exhaust system.** This system maintains negative pressure inside the chamber improving the exhaust of hazardous vapors. Dampers at the chamber intake and forced exhaust intake are factory-set to meet individual chamber exhaust requirements. Airflow switch stops heaters in the event of airflow loss.

- 6. Airflow interlock protection devices.** These devices shut down heating power unless blower systems are operating. Loss of recirculating air also allows heating element surface temperatures to surpass the auto-ignition temperature. Therefore, two interlocks are required: An electrical interlock to disconnect the heating element circuit if the motor overload protection device disconnects the blower motor, and a direct acting mechanical device that responds directly to airflow loss.

- 7. Direct-drive blower systems.** Direct drive systems eliminate potential failures of belt driven systems.

- 8. Fire extinguishing port.** Sprinkler head, CO₂, or foam systems that respond to overtemperature protection control or their own direct-flame or smoke sensing devices are at times specified by regulatory agencies for very hazardous applications.

FRICION-AIRE®

HS Series Models



– Model HS-1202 –

U.L. LISTED for Class I, Group D operation on selected units ...the first and only electric ovens that have this listing

General Specifications

Models: 1002, 1202, 3802, & 362

Temperature range: +25°C above ambient to +150°C (302°F)

Typical air temperature uniformity: at +100°C: ±0.5°C (HS-362 at +150: ±1.0°C)

Run up time: (no load) to +150°C: 120 minutes (HS-362: 60 min.)

Cool down time: (no load) to +50°C: 30 minutes

Control accuracy: ±0.5°C

Drift: (over 24-hour period) at +50°C: ±1°C at +100°C: ±0.75°C at +150°C: ±0.50°C

Average velocity: (adjustable) Maximum: 400/FPM (HS-362: 500/FPM) Minimum: 100/FPM (HS-362: 250/FPM)

General Specifications

Models: 1004, 1204, 3804

Temperature range: +20°C above ambient to +260°C (500°F)

Typical air temperature uniformity: at +100°C: ±0.5°C; +200°C: ±1.0°C

Run up time: (no load) to +260°C: 140 minutes

Cool down time: (no load) to +50°C: 30 minutes

Control accuracy: ±0.5°C

Drift: (over 24-hour period) at +50°C: ±1°C at +100°C: ±0.75°C at +150 or +200°C: ±0.50°C

Average velocity: (adjustable) Maximum: 500/FPM Minimum: 250/FPM

The three standard HS models (1002, 1202, 3802) have been listed by Underwriter's Laboratories for operation in Class I, Group D hazardous locations. They are ideally suited for the testing and processing of hazardous materials, paints, solvents and lacquers. There are no heating elements in the chamber and no inherent hot spots to create potential danger. Tests show that load temperature follows closely behind chamber temperature. If the application calls for the processing of hazardous materials over extended periods, the load temperature and chamber temperature will be practically equal at all times. When chamber and load reach complete equilibrium they will remain so indefinitely until the temperature is deliberately changed. Even if spillage of flammables inside the chamber occurs, danger is minimized since any surface the liquid encounters is only as hot as the interior environment.

UL Listed Models

Model Number	Inside Dimensions Inches (cm)			Overall Dimensions Inches (cm)			H.P.	*Approx Heating Power (WATTS)	Capacity Cu. Feet (liters)	Shipping Weight lbs (kg)
	W	D	H	W	D	H				
† HS-1002	14 (36)	17 (43)	12 (30)	37 (94)	33 (84)	48 (122)	1.0	500	1.3 (36.8)	280 (127)
HS-1202	25 (63)	20 (51)	20 (51)	42 (107)	39 (99)	63 (160)	2.0	1300	5.2 (147.3)	400 (182)
HS-3802	38 (96)	25 (63)	25 (63)	61 (155)	46 (117)	68 (173)	3.0	2000	13.7 (388)	520 (236)

†Bench Model * Voltage - all models: 208/240/480 V / 3-Phase / 60 Hz. A.C. Chambers will operate satisfactorily on 208 V / 3-Phase / 60 Hz. A.C. when motor is connected for 240 V / 3-Phase / 60 Hz. A.C. Available Option: Electric OTP with Door Switch. All electric - Class I, Group D, non-indicating overtemperature system to act as backup to main overtemperature control. Provides extra protection for critical loads. Note: This option deletes UL listing of unit.

The HS-362 model offers all of the operational advantages of the standard models in a size that meets higher volume processing requirements. Its design resembles the typical batch oven configuration and provides a work chamber volume of 36 cubic feet. It delivers controlled batching temperatures in a range from 25°C above ambient to +150°C (302°F). The HS-362 ovens have been specially engineered to meet the stringent design requirements of Class I, Group D service. They incorporate a relief panel and safety cage centered in the back wall, plus Class I, Group D motors and starters with approved M.I. cable and fittings. An electric non-indicating backup OTP in a Class I, Group D enclosure is furnished as standard on this unit. A Class I, Group D door switch that shuts off the blower when the door is opened is also included as standard.

Non UL Listed Models

Model Number	Inside Dimensions Inches (cm)			Overall Dimensions Inches (cm)			H.P.	*Approx Heating Power (WATTS)	Capacity Cu. Feet (liters)	Shipping Weight lbs (kg)
	W	D	H	W	D	H				
HS-362-1	37 (94)	37 (94)	48 (122)	66 (168)	58 (147)	91 (231)	10.0	6500	36.0 (1019.5)	2200 (1000)

Voltage: 208/240/480 V / 3-Phase / 60 Hz. A.C. Chamber will operate satisfactorily on 208 V / 3-Phase / 60 Hz. A.C. when motor is connected for 240 V / 3-Phase / 60 Hz. A.C.

The higher temperature HS models (1004, 1204, 3804) are not U.L. listed because of their increased temperature capabilities. They exceed temperatures allowed in a Class I, Group D location, but they have the same basic construction and operating characteristics of the other HS models previously described. An electric non-indicating backup OTP in Class I, Group D enclosure is furnished as standard on these higher temperature units. A Class I, Group D door switch that shuts off the blower when the door is opened is also included as standard.

Non UL Listed Models

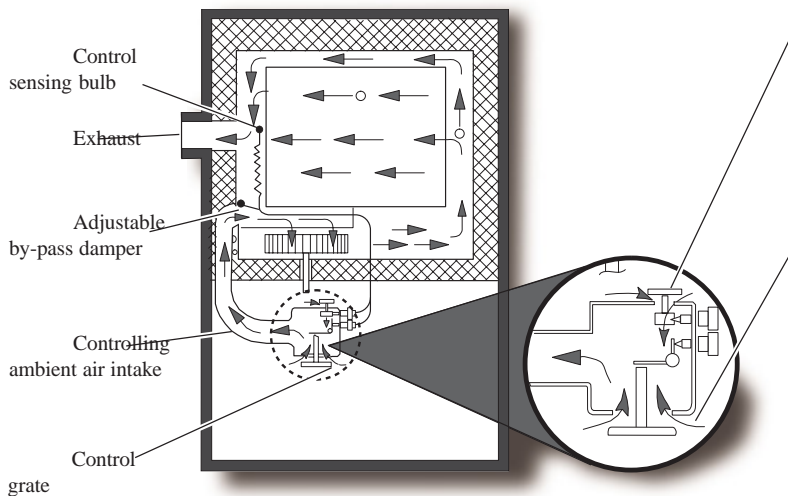
Model Number	Inside Dimensions Inches (cm)			Overall Dimensions Inches (cm)			H.P.	*Approx Heating Power (WATTS)	Capacity Cu. Feet (liters)	Shipping Weight lbs (kg)
	W	D	H	W	D	H				
*† HS-1004-1	14 (36)	17 (43)	12 (30)	37 (94)	33 (84)	48 (122)	1.0	600	1.3 (36.8)	280 (127)
* HS-1204-1	25 (63)	20 (51)	20 (51)	42 (107)	39 (99)	63 (160)	3.0	2000	5.2 (147.3)	400 (182)
* HS-3804-1	38 (96)	25 (63)	25 (63)	61 (155)	46 (117)	68 (173)	5.0	3000	13.7 (388)	520 (236)

†Bench Model * Voltage - all models: 208/240/480 V / 3-Phase / 60 Hz. A.C. Chambers will operate satisfactorily on 208 V / 3-Phase / 60 Hz. A.C. when motor is connected for 240 V / 3-Phase / 60 Hz. A.C.

FRICION-AIRE®

...the precision electric batch ovens without heating elements or electrical controls

Here's how it works...



Overtemperature protection

Non-electrical system powered by its own secondary bellows responds to its own sensing element. A spring-loaded vent with inlet area greater than control vent area is latch-closed by reset lever on control panel. If main control fails, properly set OTP safety trips vent latching mechanism to lock vent in the fully open position. The resulting increase in exhaust capacity immediately drops chamber temperature. Vent must be reclosed by manually pressing the reset lever. Oven operation continues at safe temperature.

Control operation

A temperature-sensitive bellows regulates fresh ambient air to a blower system. Temperature is set by control dial. As the temperature rises with blower operation, bellows expand to open and position the control gate. More air enters the system causing sharp temperature curve-off and stabilization.

Adjustable by-pass damper vane establishes control inlet pressure. When horizontal, the damper restricts path of blower only through control. Since this reduces CFM and velocity, heating is minimized for control at lower temperatures. When damper is vertical, system recirculates at maximum for maximum heat.

While a large air volume must be moved to generate heat, much of it passes through the by-pass chamber surrounding the work chamber. The small percentage passing through the inner chamber is practical for most applications.

Solid side walls are available for applications involving the drying of lightweight powders and other sensitive airborne product loads.

Friction-Aire...a chamber designed for the hazardous processing environment.

Class I, Group D

Friction-Aire chambers can be used for a number of hazardous work applications due to the unique operating concept of providing controlled heat without heating elements. This characteristic helps solve the problem of operational safety when operating in a Class I, Group D processing environment by removing an ignition source.

Three models of the Friction-Aire family are listed by Underwriter's Laboratories. These chambers are the first—and only—electric ovens to have ever been so listed.

Friction-Aire ovens are a sound solution to the Class I, Group D processing applications. If you would like more information or need help in choosing the right chamber for your specific application requirement, please let us know. We would like to be of service.

How it works

The Friction-Aire oven provides a controlled environment with 100% straight-line proportional temperature performance without heating elements or electrical controls. It uses a unique high velocity airflow system to move air through a prescribed pattern to generate heat. This concept offers a number of advantages.

Temperature uniformity

There is no central heat source in the system. Heat is generated within the air as it moves using a blower to develop turbulence and friction. As a result there are no hot spots, and no points within the chamber that exceed the indicated air temperature. Temperature stratification problems are therefore eliminated by Friction-Aire.

Natural interlock of blower and heat

This characteristic means that if the motor/blower system—the only source of heat—fails, the chamber temperature will automatically drop. No dangerous temperature runaway conditions exist in this system.

If air circulation stops, there are no uncontrolled heating elements to increase oven temperature above the setpoint of the control.

The need for a timed purge cycle is eliminated to avoid igniting the air/solvent mixture at start-up. When product is initially placed in the oven, a high concentration of volatiles is present due to rapid evaporation from the product. When a conventional heating element design is used, this concentration must be diluted by a timed purge-cycle prior to air heater turn-on. Since Friction-Aire ovens have no ignition source, this need is eliminated.

Built-in overtemperature protection

Friction-Aire ovens incorporate a unique and intrinsically safe non-electrical overtemperature protection system. It is powered by its own secondary bellows. The bellows responds to its own sensing bulb. A spring loaded vent with an inlet area greater than the control vent area is latch-closed by a reset lever on the control panel.

If the main control fails, the OTP safety sending bellows trips the vent latching mechanism to lock the vent in the fully open position. The resulting increase in exhaust capacity immediately drops the chamber temperature. The vent must be re-closed manually by pressing the reset lever. Oven is then ready to continue operation.

Fast cool-down rates

High-velocity air generated by the blower system is fully controllable within the work chamber and reduced to a practical rate during the work cycle.

Fast cool-down is an inherent capability of the system. Typically, an empty oven temperature will drop from +150°C to +50°C in thirty minutes.

Greater cost-effective performance

Energy savings over conventional ovens are substantial. There is less to maintain and service with Friction-Aire ovens, due to the type of construction and basic operational concept.

Class A Batch Ovens

DCSA Series Models

World class chamber engineering that meets NFPA Bulletin 86 requirements



– Model DCSA-166 –

The design approach of the Class A batch system is to prevent the atmosphere within the chamber from ever coming close to the lower limit of the solvents being processed. In order to assure safe operations, maximum solvent amounts, exhaust flow, solvent type, and operational temperature must be carefully controlled. Regular maintenance is essential.

8 models to choose from

Blue M Class A batch ovens are mechanical convection electric chambers that include safety features recommended in NFPA Bulletin 86 as standard.

The design of the chamber concedes that the element temperature may be well above the auto-ignition point of some flammable materials but this is mitigated by maintaining a non-explosive mixture through the use of higher than normal exhaust rates. Increased heating element KW compensates for this exhaust factor.

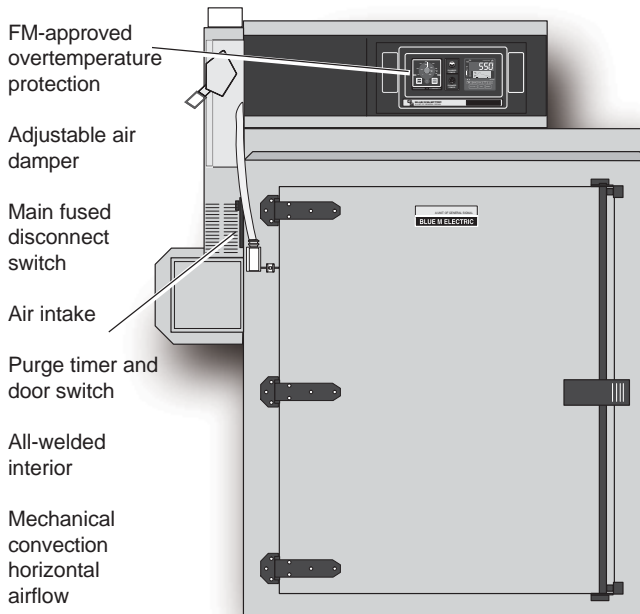
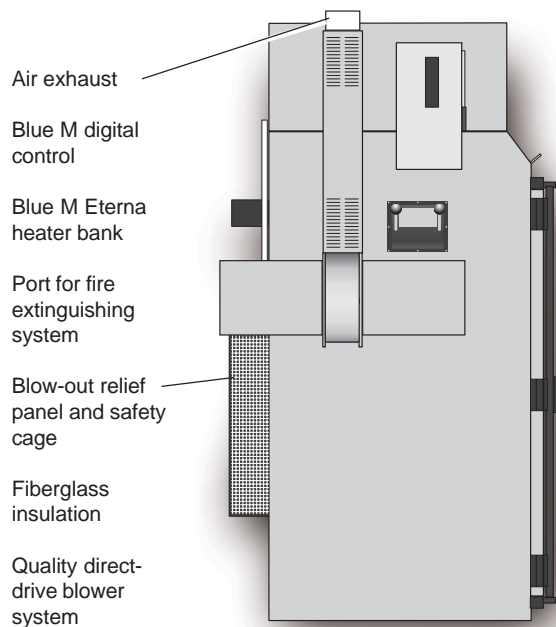
In addition to meeting NFPA recommendations, this oven design has exceptional exhaust capabilities for handling solvents. A negative pressure is maintained in the work chamber that ensures that all hazardous vapors will be expelled through the exhaust duct and not through the oven door, blower shaft seal or other apertures. These ovens are complete systems. No additions are required to meet the recommendations of NFPA Bulletin 86 for processing hazardous work loads.

General Specifications

Temperature range:
+15°C above ambient to +316°C (600°F)

Run up time: (no load)
to +316°C: 90 minutes (depending on exhaust)

Control accuracy: ±0.5°C



Note: Three larger models have controls mounted in compartment on right side. Units 48" wide have two doors.

Class A Batch Ovens

Oven Features

- ◆ **All welded housings**
 - reinforced heavy gauge cold rolled steel.
- ◆ **Heavy gauge chamber interiors**
 - all stainless steel
 - welded construction prevents seepage and the build up of potentially dangerous material between chamber walls.
- ◆ **4" Fiberglass insulation**
 - ensures moderate cabinet skin temperature.
- ◆ **Silicone sealed steel doors**
 - insulated double-wall construction.
 - Smaller units have one door. Units 48" wide have two doors but no center mullion.
- ◆ **Eterna heater banks**
 - cylindrical and designed to provide years of service.
- ◆ **Direct drive motor/blower system**
 - electrically interlocked to prevent heater circuit from energizing unless blower is operating.
- ◆ **Forced exhaust system**
 - maintains negative pressure inside the chamber improving the exhaust of hazardous vapors.
 - dampers at the chamber intake and forced exhaust intake are factory-set to meet individual chamber exhaust requirements, as determined by customer's application.
 - airflow switch stops heaters in the event of airflow loss.
- ◆ **Adjustable purge/timer door switch**
 - can be set (1 to 55 minutes) to provide a minimum of four complete air changes before heaters are energized. Timer automatically resets and repurges if power fails or cycle is interrupted. Actual time setting is a function of quantity of solvent and process temperature. This setting is established in the factory based on customer requirements.

Note: Factory settings are indicated on the front door of each unit. Any change must be made by a qualified safety engineer.

The Blue M Warranty

- ◆ 1-year parts and labor warranty.
- ◆ 3-year exchange warranty on standard controls.



– DCSA-256 Bench Model –

- ◆ **Blow-out relief panel**
 - includes safety cage installed in the rear wall.
 - panel area is one square foot per 15 cubic feet of oven volume in accordance with NFPA Bulletin 86.
- ◆ **2" Fire extinguishing port**
 - located on the rear wall.
 - provides for customer's installation of a fire extinguisher system that meets local fire code requirements.
- ◆ **Wiring**
 - all safety circuits are 120 volts supplied through a transformer with grounded secondary. A fused disconnect switch is supplied on unit for main power disconnect and single point power connection.
- ◆ **Angle shelf supports**
 - provided every 2", 4", or 6" depending on model.
- ◆ **Optional Slotted Shelves**
 - three larger models are made of heavy steel angle iron framing and expanded metal.
- ◆ **Optional 10" electronic recorder**
 - circular chart instrumentation is available for recording operational performance.
- ◆ **Optional PRO-550 controller**
 - microprocessor-based (1/4 din) programmable PID control with capabilities of up to 30 programs/99 segments each or one 300 segment program. Display resolution from 0.1 to 1.0 °C or °F. Process alarm deviation alarm.

Bench Model

Model Number	Inside Dimensions Inches (cm)			Overall Dimensions Inches (cm)			Element kW	Line Amps	Cubic Feet Capacity
	W	D	H	W	D	H			
DCSA-256-FHP	25 (63)	20 (51)	20 (51)	49 (124)	37 (94)	62 (157)	9 / 12	29 / 33	5.8

Voltage: 208/240V / 3-Phase / 60 Hz.

Floor Models

Model Number	Inside Dimensions Inches (cm)			Overall Dimensions Inches (cm)			Element kW	Line Amps	Cubic Feet Capacity
	W	D	H	W	D	H			
DCSA-166-FHP	24 (61)	24 (61)	48 (122)	55 (140)	45 (114)	86 (218)	13.5 / 18	44 / 50	16
DCSA-246-FHP	36 (91)	24 (61)	48 (122)	67 (170)	45 (114)	86 (218)	16 / 21	51 / 58	24
DCSA-326-FHP	48 (122)	24 (61)	48 (122)	79 (201)	45 (114)	86 (218)	20 / 27	63 / 72	32
DCSA-366-FHP	36 (91)	36 (91)	48 (122)	67 (170)	54 (137)	86 (218)	20 / 27	63 / 72	36
DCSA-606-FHP	36 (91)	48 (122)	60 (152)	80 (203)	69 (175)	96 (244)	26 / 34	86 / 100	60
DCSA-806-FHP	48 (122)	48 (122)	60 (152)	92 (234)	69 (175)	96 (244)	30 / 40	100 / 115	80
DCSA-966-GHP	48 (122)	48 (122)	72 (183)	92 (234)	69 (175)	108 (274)	48	67	96

Voltage – all models: 208/240/480V / 3-Phase / 60 Hz. Except DC-966A GHP-1 which is 480 V only.

- All specifications are subject to change without notice. -

Class A Oven

CSP-400 Series Models

Flash curing * Drying solvents * Meets NFPA Bulletin 86

Blue M ovens have earned a long-standing reputation for exceptional performance, long service life and ease of operation over a broad range of applications. The Blue M CSP-400 Series of Class A Hazardous Material Processing Ovens provides a compact, cost-effective tool that meets NFPA Bulletin 86 for handling solvents and expelling hazardous vapors.

The CSP-400 Series is ideal for flash curing paint samples, drying solvents, varnish, or adhesives. It is also useful in laboratories that require a variety of product loads.

Note: Factory settings are indicated on the front door of each unit. Any change must be made by a qualified safety engineer.



– CSP Stacked Model –

Oven Features

- ◆ **All-welded, heavy-duty exterior**
 - heavy-gauge, reinforced cold-rolled steel.
- ◆ **Type 304 stainless steel interior**
 - provides excellent corrosion resistance.
- ◆ **4" Fiberglass insulation**
 - to ensure moderate cabinet skin temperature.
- ◆ **Heavy-duty sealed door**
 - employs tubular silicone gasket around entire perimeter.
- ◆ **Welded interior seams**
 - create vapor tight environment.
 - prevent fume infiltration.
- ◆ **Adjustable shelves**
 - 7 positions; nickel-plated or stainless steel.
- ◆ **Temperature Controls**
 - available with STAT-350 or PRO-550 control system.

General Specifications

Temperature range: 15°C above ambient to 343°C (650°F)

Control accuracy: ±0.5°C

Uniform, Accurate and Reliable Temperature Control

- ◆ **Volatile fume exhaust system**
 - removes fumes from oven interior.
 - blower provides up to 90 CFM to power exhaust function.
 - control signal to heater is interlocked with airflow switch so heaters won't operate unless the powered exhaust is functioning.
- ◆ **Exclusive Blue M Eterna™ heating elements**
 - nichrome and ceramic heater bank for fast response.
 - low-watt density assures long life.
- ◆ **Safety relief panel**
 - located on rear wall.
 - relieves rapid pressure increases during processing.
 - blowout panel ruptures during fault to vent oven.
- ◆ **Independent overtemperature protection**
 - 1/4 DIN cutout, FM approved with sheathed type J thermocouple sensor.
 - turns off air heater when temperature exceeds selected operating limit.
 - audible alarm and manual reset.
- ◆ **Safety purge timer**
 - provides fresh-air purge of oven.
 - reset/started by opening and closing oven door.
 - allows powered exhaust and recirculating blowers to run for preset interval.
 - interlocked with oven air heater to prevent heater from running during purge cycle.

Blue M CSP-400 Series Ovens

The Blue M CSP-400 Series employs the STAT-350 control system, a single-loop temperature controller featuring a bright LED display that shows setpoint temperature and process temperature simultaneously.

Indicator LEDs on the controller face log alarms and control output status during oven operation. All control functions are accessed using three large keys on the controller face, guided by prompts from the control display.

The controller monitors oven air temperature using a sheathed type J thermocouple, located in the oven work space. Controller software interlock prevents accidental data loss or configuration changes.

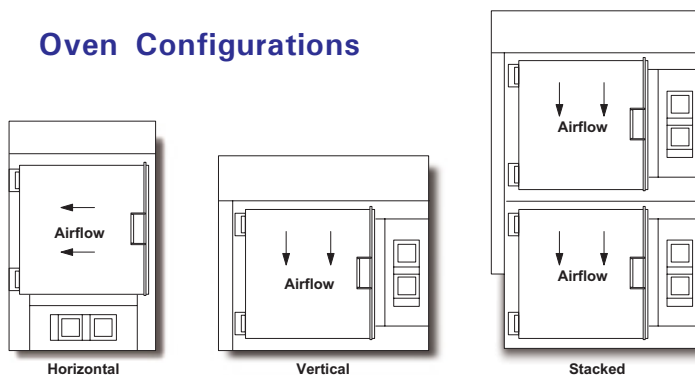


- Model CSP-400A -

Oven Options

- ◆ PRO-550 profiling controller with digital communications
- ◆ Nickel-plated or stainless steel shelves
- ◆ Digital process timer
- ◆ Circular chart recorder
- ◆ Floorstand
- ◆ Fused power disconnect mounted on unit

Oven Configurations



CSP-400 Condensed Specifications

Model	Inside Dimensions WxDxH in. (cm)	Overall Dimensions WxDxH in. (cm)	Workspace Volume (liters)	No. of Workspaces	Machine Footprint	Machine Weight (kg)	Floor Load
Single Horizontal	19 x 15 x 18 (48 x 38 x 46)	31 x 35 x 50 (79 x 89 x 127)	3.0 cu. ft. (85)	1	7.5 sq. ft.	300 lbs. (136)	40 lbs./sq. ft.
Single Vertical	18 x 15 x 19 (46 x 38 x 48)	45 x 35 x 40 (114 x 89 x 102)	3.0 cu. ft. (85)	1	10.9 sq. ft.	300 lbs. (136)	27.5 lbs./sq. ft.
Stacked Vertical	18 x 15 x 19 (46 x 38 x 48)	45 x 35 x 71 (114 x 89 x 180)	6.0 cu. ft. (170)	2	10.9 sq. ft.	600 lbs. (273)	55 lbs./sq. ft.

- All specifications are subject to change without notice. -

Electrical Service & Maximum Current Draw

Electrical Service	Single oven configuration/ Line current heating capacity	Stacked oven configuration/ Line current heating capacity
208V/1-ph/60 Hz	30 amperes/5.3 kW	60 amperes/2 x 5.3 kW
240V/1-ph/60 Hz	34 amperes/7 kW	68 amperes/2 x 7 kW

Blue M Control System Packages

The Blue M Pro-750 and Pro-550 are designed for reliability and ease of operation, and include a full range of standard features.

- ◆ Double-size 5 digit LED display for easy viewing from a distance.
- ◆ Built-in autotuning allows optimal setting of PID parameters at the touch of a button.
- ◆ Eight sets of PID settings for each output enable the system to have custom PIDs for various portions of your profile.
- ◆ "Super" function improves performance by "learning" about a system's responses to process changes. Signal interference and energy efficiency are factored into the temperature controller's operation.
- ◆ Manual mode enables control of output for troubleshooting.
- ◆ LCD display can be configured to display thermal profiles, setpoint temperature, process specific text, or other parameters.
- ◆ Storage capacity of up to 300 programs containing up to 99 segments per program, or 3,000 segments total (**Pro-750**), or 30 programs containing up to 99 segments per program, or 300 total (**Pro-550**).
- ◆ Can be used to control cooling features such as proportional dampers or a cooling coil.
- ◆ Password protection can be used to prevent unauthorized users from changing programs or accessing critical settings.
- ◆ RS-485 communications port.
- ◆ Optical communications interface offers quick connection to a PC.
- ◆ Local mode enables operation as a single setpoint control, enabling operation without creating a program.
- ◆ FM approved overtemperature protection is provided by an independent control device.



Blue M Pro-750 Offers Cascade Control

A Cascade control can reduce thermal response time by 50% or more. This system offers an advantage over "traditional" controls by conditioning air temperature, based on input from both the part temperature and the air temperature. The controller raises the air temperature (with preset limits) to above setpoint, driving your product toward the desired temperature as fast as possible. As the product approaches setpoint, the air temperature will drop to provide near zero product temperature overshoot.

Standard Blue M Control System Features

The Blue M control system packages are designed for reliability, ease of operation, and include a full range of standard features.

- ◆ Double-size 4 digit LED display for easy viewing from a distance.
- ◆ Built-in autotuning allows optimal setting of PID parameters at the touch of a button.
- ◆ Four sets of PID settings for each output enable the system to have custom PIDs for various portions of your profile.
- ◆ "Super" function improves performance by "learning" about a system's responses to process changes. Signal interference and energy efficiency are factored into the temperature controller's operation.
- ◆ Manual mode enables control of output for troubleshooting.

Stat-350 Single Setpoint Control System

- ◆ Simultaneously displays process temperature and setpoint temperature.
- ◆ Simple operation—just press the up arrow to raise temperature; down arrow to lower temperature.
- ◆ Optional timers can be used in conjunction with this control, offering an economical and easy-to-use solution to timed processes.



Pro-350 Programmable Control System



- ◆ Simultaneously displays process temperature and setpoint temperature.
- ◆ Storage capacity of up to 2 programs containing up to 10 segments per program.
- ◆ Password protection can be used to prevent unauthorized users from changing the programs or accessing critical settings.
- ◆ Local mode enables operation as a single setpoint control, enabling operation without creating a program.

Overtemperature Protection



Blue M Temp Limit

The standard Temp Limit Control for the Blue M Pro-750, Pro-550, Pro-350, or Stat-350 offers overtemperature protection to protect oven and product. Heaters are latched off, requiring manual reset to restore normal operation. Audible and visual alarms alert operator of fault conditions. The device is UL recognized and FM approved.



Blue M

SAFETY OVENS

OUTSTANDING CUSTOMER SUPPORT

- ◆ Highly qualified, factory trained technical support staff to assist you in identifying your equipment problems and parts needs.
- ◆ Parts Department Phone: 877.872.1409
Service Department Phone: 570.326.1755
Parts Department FAX: 570.320.2160
- ◆ Customized maintenance agreements available to meet your equipment's preventive maintenance needs.



This brochure outlines a number of products available for the applications described. If you have any questions or need assistance on any aspect of what is presented here, please contact us.



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