




**BULLETIN
CA-460**

Class 100 Cabinet Ovens

**CLASS 100
CLEAN ROOM
HORIZONTAL AIR FLOW
CABINET OVENS**

For processes where eliminating particle contamination is required, such as sterilization, depyrogenation, curing and drying. These electrically heated ovens come in five sizes with features to provide a low particle count Class 100 atmosphere inside. Operating temperatures to 500°F with work space volumes ranging from 5 to 38.3 cubic feet. Exterior construction minimizes particle generation. Heavy duty units equally suited for pharmaceutical or industrial applications.

STANDARD FEATURES

-  **UL LISTED CONTROL PANEL**
- **Standard Class 100 Cabinet Ovens from Grieve meet the requirements of National Fire Protection Association Standard 86, Industrial Risk Insurers, Factory Mutual and OSHA standards. For some applications, such as those involving flammable solvents or hazardous locations, the above organizations require additional safety devices.**
- **Controls**
 - Digital, microprocessor based, thermocouple actuated, indicating temperature controller
 - Solid state heating element relay
 - Motor control push buttons and on-off heat switch
 - LED pilot lights
- **Safety Equipment**
 - Adjustable, thermocouple actuated, manual reset excess temperature controller
 - Separate heating element control contactors
 - Recirculating blower air flow safety switch
- **Class 100 Construction**
 - Recirculation HEPA filter, stainless steel, high temperature, 99.97% efficient on 0.3 micron particles
 - Direct driven stainless steel recirculating blower
 - Silicone rubber blower shaft seal
 - Stainless steel interior—type 304, 2B finish
 - Continuously back-welded seams on oven interior
 - Easy to remove interior duct work for cleaning
 - Incoloy sheathed tubular heating elements
 - DOP test port upstream of HEPA filter
 - Positive latching door hardware
 - Silicone rubber door seal
 - Sealed penetrations for heaters, and thermocouples
 - Adjustable fresh air inlet—optional HEPA filter with prefilter available
 - Adjustable exhaust outlet—optional HEPA filter available
 - Two (2) stainless steel shelves
 - Channel shelf supports prevent shelves tipping
 - Brushed stainless steel control panel face and door cover
 - Aluminized steel exterior with white epoxy paint—optional brushed stainless steel exterior available
 - 1 year limited warranty
- **Every oven fully assembled and individually factory tested**

Specifications Subject to Change Without Notice
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MODEL CLB-500
WITH SAFETY EQUIPMENT FOR HANDLING FLAMMABLE SOLVENTS - SEE BULLETIN TC-940



MODEL CLD-500
WITH OPTIONAL PROGRAMMABLE TEMPERATURE CONTROLLER

SPECIFICATIONS

CAUTION: OVENS PROCESSING COMBUSTIBLE MATERIAL ARE REQUIRED BY NATIONAL FIRE PROTECTION ASSOCIATION STANDARD 86 TO HAVE A FIRE SUPPRESSION SYSTEM. IF FLAMMABLE SOLVENTS OR VAPORS ARE PRESENT IN AN OVEN, OSHA REQUIRES CONFORMANCE WITH NFPA 86 WHICH DEFINES OVENS FOR THESE APPLICATIONS AS CLASS A OVENS. A POWERED FORCED EXHAUSTER AND OTHER NON-STANDARD SAFETY EQUIPMENT MUST BE ADDED. SEE BULLETIN TC-940 AND CONSULT FACTORY.

Model	Work Space		Outside Dimensions (WxDxH)	Max Temp	Blower		Recirculation HEPA Filter* (WxDxH)	Insulation	Doors	KW	Operating Characteristics†			Approx Shipping Weight
	Dimensions (WxDxH)	Volume Cu Ft			CFM	HP					Control Accuracy	Oven Uniformity	Rise Time	
CLA-500	24" x 24" x 15"	5	66" x 40" x 52"	500°F	250	1/2	12" x 6" x 12"	6"	Single	8	±0.3%	±4°F	30 min	935 lbs
CLB-500	24" x 36" x 27"	13.5	66" x 52" x 64"	500°F	600	3/4	24" x 6" x 24"	6"	Single	10	±0.3%	±4°F	33 min	1340 lbs
CLC-500	36" x 36" x 27"	20.3	80" x 52" x 64"	500°F	750	1	30" x 6" x 24"	6"	Single	15	±0.3%	±4°F	29 min	1645 lbs
CLD-500	36" x 36" x 39"	29.3	80" x 52" x 76"	500°F	1000	1 1/2	30" x 6" x 24"	6"	Single	20	±0.3%	±4°F	26 min	1960 lbs
CLE-500	36" x 36" x 51"	38.3	80" x 52" x 88"	500°F	1500	2	30" x 6" x 24"	6"	Single	30	±0.3%	±4°F	21 min	2285 lbs

*Model CLE-500 utilizes two (2) filters.

†Width increases if recording instrument is installed.

†Accuracy as percent of controller span. Uniformity at 50°F below maximum temperature. Rise Time in minutes to 50°F below maximum temperature. Tests run with empty oven and minimum exhaust. Performance will vary with load and application. See Bulletin TC-920 for additional details.

STANDARD EQUIPMENT

• All Models

- 208 volts, 3-phase, 60 Hz
- 230 volts, 3-phase, 60 Hz
- 460 volts, 3-phase, 60 Hz
- Other electrical characteristics available

These Class 100 ovens come in five sizes.

- **CLA-500** - 5.0 cubic feet, holds 4 shelves
- **CLB-500** - 13.5 cubic feet, holds 8 shelves
- **CLC-500** - 20.7 cubic feet, holds 8 shelves
- **CLD-500** - 29.3 cubic feet, holds 12 shelves
- **CLE-500** - 38.3 cubic feet, holds 16 shelves

They feature full horizontal air flow and adjustable patented opposed louvers on full coverage supply and return duct work.

Stainless steel (type 304, 2B finish) interior with continuously back-welded seams and easily removable interior duct work for cleaning. Recirculated air flow is continuously passed through a high temperature HEPA filter to remove particles. High temperature HEPA filter has stainless steel housing and is 99.97% efficient on 0.3 micron particles.

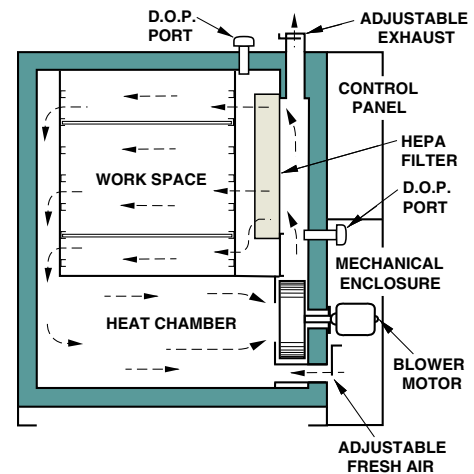
Each features completely wired, side access UL listed control panel enclosing terminals for incoming power, temperature controllers, push buttons and pilot lights. Motor starter and solid state heating element relay electrically interlocked to shut off heaters if power to blower is interrupted and to permit operation of blower without heat for cooling. Incoloy sheathed tubular heating elements. Exhaust outlet 4" diameter.

Mechanical enclosure covers recirculating blower motor, heating element terminal box, air flow safety switch and other components to provide continuous exterior surface for easy cleaning.

Outer door cover and control panel face constructed from #4 brushed finish, type 304 stainless steel. Aluminized steel exterior finished with white epoxy enamel paint.

Two (2) reinforced 100 lbs uniformly distributed load capacity stainless steel shelves; shelf support channels on 3" centers.

Circulation Diagram (Front View)



Heated air is forced through HEPA filter prior to entering work space and then passes between shelves and across parts.

ADDITIONAL EQUIPMENT AVAILABLE*

- **Additional Shelves**, 100 lbs distributed load per shelf, 400 lbs maximum oven load, specify oven model when ordering.
- **Programmable Temperature Controller**, microprocessor based, digital indicating, thermocouple actuated, in lieu of standard controller **PTC3**
- **Recording Thermometer**, thermocouple actuated, 24-hour, 10" diameter circular chart used in conjunction with standard controller **RT**
- **Programmable Recording Temperature Controller**, microprocessor based, thermocouple actuated, digital display, 24-hour, 10" diameter circular chart, in lieu of standard controller **PRTC3**
- **Digital Timing Temperature Controller**, microprocessor based, digital indicating, incorporates 99 hour 59 minute timer, starts timing when temperature reaches set point and shuts down oven at end of set time . . **DTS3**
- **Digital Shut Down Timer**, with continuous "hold" feature **SDT**

- **Digital Batch Timer**, for uniformly timing batch operations. Continuous alarm with door interlock; alarms at end of preset time period until door is opened or timer reset . . **BT**
- **Automatic Door Switch**, turns off blower and heat when door is opened. Restores blower and heat when door is closed . . **ADS**
- **Stainless Steel Exterior**, type 304 with #4 brushed finish, in lieu of white epoxy painted aluminized steel. **SSE**
- **Automatic Door Lock**, solenoid operated, interlocked with oven temperature, optional programmable temperature controller or optional digital timing system **ADL**
- **Pass Through Construction**, includes additional door on rear of oven and stainless steel flange to seal oven in factory wall **PTC**
- **Polished Front Welded Interior Seams**, including 1/2" radius inside corners, in lieu of back welded seams **PS**

- **HEPA Fresh Air Filter**, 12" x 12" x 6", 99.97% efficient at 0.3 micron particle size, with 2" thick prefilter. Installed in stainless steel housing over the fresh air inlet on the right side of the oven inside the mechanical enclosure **HFA**
- **HEPA Exhaust Filter**, 12" x 12" x 6", stainless steel high temperature, 99.97% efficient at 0.3 micron particle size. Installed in stainless steel housing over the exhaust outlet on the top of the oven. Adds 15" to overall oven height **HEF**
- **Pressure Gauge**, 0-2 inch water column static pressure gauge, installed across either recirculation filter, fresh air filter or exhaust filter, to measure pressure drop across filter. For use in determining when filters require replacement **PG**
- **Pressurizing Blower** with air flow safety switch, installed in conjunction with HEPA fresh air filter to maintain positive pressure within the oven, 50 CFM capacity **PB**



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*See Bulletin TC-960 for modifications and other optional equipment.