O v e n s

C L A S S " 1 0 0 " C L E A N R O O M

Lab-Line

ULTRA CLEAN FOR SEMICONDUCTOR AND ELECTRONICS APPLICATIONS!

- *— Meets or exceeds Class "100" air standards*
- *— Rapid temperature rise and recovery times*
- *— Excellent temperature control and uniformity*
- *— Choose from models with or without HEPA filter*

P R O D U C T   D E S C R I P T I O N

- HEPA filter models available for maximum contamination protection.
- Rapid rise and recovery times, plus excellent uniformity and precise temperature control.
- Features our exclusive mechanical convection air flow system.
- 3″ (7.6 cm) of silica-based insulation between oven chamber and exterior walls minimizes heat radiation to surrounding environment.
- Drawer-style control panel is protected from spills and easily pulls out for access.
- Corrosion-resistant stainless steel interior construction.
- Shelves, supports, and plenums are easily removed for cleaning.
- Four adjustable perforated stainless steel shelves included.
- Durable exterior construction of cold-rolled steel with a white powder coat finish.

S A F E T Y

- Adjustable high limit hydraulic safety thermostat with indicator lamp maintains temperature a few degrees above set point in the event of primary control failure and prevents overtemperature conditions.
- Fused electrical system provides overload safeguards.

S T A C K I N G   R A C K S

- Safely stack two ovens of the same size.
- Fan removes heat generated by bottom oven, preventing damage to top unit.
- Available only for 3490M, 3492M, 3494M-1, and 3495M-1 series clean room ovens (120V; 50/60 Hz).

O P E R A T I O N

- User-friendly PID microprocessor temperature control allows operator to repeatably set operating temperature in the range or ambient +5°C to 250°C.
- Single program controller comes standard—two ramps and two dwells, ramp adjustable from as low as 0.01°C per minute, dwell from 0 to 9999 minutes.
- Four program controller offers eight ramps and eight dwells, ramp from as low as 1°C per minute, dwell from 0.0 to 999.9 minutes.
- Platinum RTD sensor accurately measures actual chamber temperature.
- Adjustable door hinge, lever-actuated positive door latch and silicone gasket prevent heat loss through door seal.
- Adjustable 2″ (5.1 cm) diameter exhaust port with damper control.
- 1/8″ (3mm) N.P.T. fitting for introducing inert gas or house air into the oven chamber.
- Flowmeter and 0.3 micron filter for purging with nitrogen available on units with HEPA filters only.

O P T I O N S

- Model 3491—2″ O.D. x 9″ H x 3″ D (5.1 x 23 x 7.6 cm) stainless steel exhaust vent with adjustable air control.
- Recorder output—type K thermocouple with sub-miniature connector on back of oven (TCK suffix for oven model number).

Ovens
CLASS "100" CLEAN ROOM

PRODUCT SPECIFICATIONS

Model 3491

Single Program Controller	Four Program Controller	Chamber Dimensions Inches (cm)			Overall Dimensions Inches (cm)			Volume cu. ft. (*l*)	Shipping Weight Lb. (kg)
		W	H	D	W	H	D		
3490M	3492M	13 (33)	19.5(50)	18 (46)	21.6 (55)	35 (89)	24.25 (62)	2.6 (73.6)	205 (93)
3490M-1	3492M-1	13 (33)	19.5 (50)	18 (46)	21.6 (55)	35 (89)	24.25 (62)	2.6 (73.6)	205 (93)
3490M-3	3492M-3	13 (33)	19.5 (50)	18 (46)	21.6 (55)	35 (89)	24.25 (62)	2.6 (73.6)	205 (93)
3495M-1	3494M-1	18 (68)	19.5 (50)	18 (46)	26.6 (68)	35 (89)	24.25 (62)	3.6 (101.9)	240 (109)
3495M-3	3494M-3	18 (68)	19.5 (50)	18 (46)	26.6 (68)	35 (89)	24.25 (62)	3.6 (101.9)	240 (109)
3497M-1	3496M-1	14 (36)	19.5 (50)	18 (46)	26.6 (68)	35 (89)	24.25 (62)	2.8 (79.2)	235 (107)
3497M-3	3496M-3	14 (36)	19.5 (50)	18 (46)	26.6 (68)	35 (89)	24.25 (62)	2.8 (79.2)	235 (107)
3499M-1	3498M-1	23 (58)	19.5 (50)	18 (46)	31.6 (80)	35 (89)	24.25 (62)	4.6 (130.2)	264 (120)
3499M-3	3498M-3	23 (58)	19.5 (50)	18 (46)	31.6 (80)	35 (89)	24.25 (62)	4.6 (130.2)	264 (120)

OPERATING SPECIFICATIONS

Units Without Hepa Filters

Chamber Volume cu. ft. (*l*)	Rise Time (Ambient to 200°C)	Load Temp. Rise Time @ 150°C	Maximum Temp °C	Temperature Control @100°C	Temperature Uniformity @100°C	Temperature Control @200°C	Temperature Uniformity @200°C
2.6 (73.6)	22 minutes	8 minutes	250°C	±0.1°C	±1.0°C	±0.2°C	±1.5°C
3.6 (101.9)	18 minutes	4 minutes	250°C	±0.1°C	±1.0°C	±0.2°C	±1.5°C
4.6 (130.2)	20 minutes	7 minutes	250°C	±0.1°C	±1.0°C	±0.2°C	±1.5°C

Units With Hepa Filters

Chamber Volume cu. ft. (*l*)	Rise Time (Ambient to 90°C)	Recovery Time @ 90°C	Maximum Temp °C	Temperature Control @ 90°C	Temperature Uniformity @ 90°C
2.8 (79.2)	11 minutes	22 seconds	250°C	±0.2°C	±1.5°C

Performance specification were measured under controlled laboratory conditions. Actual performance may vary, depending on the application. Load temperature rise time was determined at 150°C. Oven was loaded with nine 4" wafer boats. A thermocouple placed in a centrally located boat was used to measure wafer temperature. Recovery time was measured after door was opened 90 degrees for 1 minute.

ORDERING INFORMATION

Model #	Volts	Electrical (50/60 Hertz) Amps	Watts	US List Price
3490M	120	15.8	1900	$5325.00
3490M-1	240	7.9	1900	$5325.00
3490M-3	208	10.1	2100	$5325.00
3492M	120	15.8	1900	$5510.00
3492M-1	240	7.9	1900	$5510.00
3492M-3	208	10.1	2100	$5510.00
3495M-1	240	12.9	3100	$6015.00
3495M-3	208	14.9	3100	$6015.00
3494M-1	240	12.9	3100	$6175.00
3494M-3	208	14.9	3100	$6175.00
3497M-1	240	12.9	3100	$7545.00
3497M-3	208	14.9	3100	$7545.00
3496M-1	240	12.9	3100	$7620.00
3496M-3	208	14.9	3100	$7620.00
3499M-1	240	12.9	3100	$6750.00
3499M-3	208	14.9	3100	$6750.00
3498M-1	240	12.9	3100	$6875.00
3498M-3	208	14.9	3100	$6875.00

ACCESSORIES

Model #	Description	US List Price
3497	Replacement HEPA filter for models 3496M-1, 3496M-3, 3497M-1, and 3497M-3	$950.00
3490M-8	Shelves for models 3490M, 3490M-1, 3490M-3, 3492M, 3492M-1, 3492M-3 brackets included.	$123.00
3495M-8	Shelves for models 3495M-1, 3495M-3, 3494M-1, 3494M-3 brackets included.	$149.00
3499M-8	Shelves for models 3499M-1, 3499M-3, 3498M-1, 3498M-3 brackets included.	$170.00
3497M-8	Shelves for models 3497M-1, 3497M-3, 3496M-1, 3496M-3 brackets included.	$117.00
TCK*	Type K Thermocouple with subminiature connector on back of oven	$175.00
3491	Exhaust chimney for ultra clean ovens	$106.00
3480-2	Stacking rack for oven models 3490M, 3490M-1, 3490M-3, 3492M, 3492M-1, 3492M-3	$515.00
3485-2	Stacking rack for oven models 3495M-1, 3495M-3, 3494M-1, 3494M-3	$546.00

Add TCK suffix to oven model number for this option.