

Thermal Processing

OVENS AND FURNACES

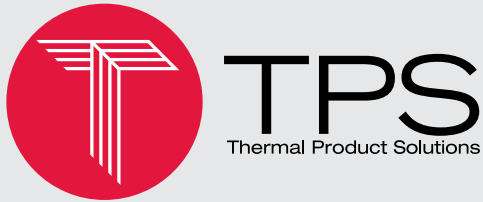
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Products:

- Aerospace Equipment
- ASTM Test Ovens
- Conveyor Ovens
- Curing Ovens
- Environmental Chambers
- Industrial Ovens
- New Energies
- Pharmaceutical Equipment
- Semiconductor Equipment
- Test Chambers

Industries:

- Aerospace
- Automotive
- Automotive Components
- Ceramics
- Computer Peripherals
- Defense
- Die Casting
- Electronic Applications
- Environmental Processing
- Fabricated Metal
- Fiber Optics
- Industrial Processing
- Machinery
- Medical Components
- Medical Devices
- Oil and Gas Drilling
- Optical Electronics
- Optics
- Petroleum
- Pharmaceutical
- Photovoltaic
- Precious Metals
- Semiconductor
- Solar Cells

Applications:

- Aging
- Alternative Fuels
- Altitude
- Annealing
- ASTM Tests
- Automotive Component Cure
- Burn-In
- Continuous Cure
- Controlled Atmosphere
- Conveyors
- Curing
- Depyrogenation
- Die Attach Cure
- Die Coat Cure
- Drill Bit Curing
- Drying
- Encapsulation Cure
- Heat Sink Attach Cure
- Ink Mark Cure
- Medical Component Cure
- Mold Cure
- Optics
- Optoelectronic Cure
- Photo Resist
- Post-Mold Cure
- Pre-Heat
- Print Cartridge Cure
- Research
- Shelf Life
- Solar Cells
- Stability
- Steady-State
- Sterilization
- Stress Relief
- Temperature/Humidity
- Thermal Cycling
- Thermal Shock
- Underfill Cure
- Vacuum
- Vivariums

Industrial

S O L U T I O N S



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THERMAL PRODUCT SOLUTIONS



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146 Series Standard Oven

Mechanical Convection Standard Ovens

The Blue M Standard Mechanical Convection Oven is ideal for a number of industrial oven applications, including ASTM testing, epoxy curing, moisture drying, UL testing, aging of electronic components and devices, and other processes and testing requirements.

► General Mechanical Convection Industrial Oven Specifications

- Temperature range: 15°C above ambient to 343°C (650°F)
- Uniformity: +/-1% of setpoint
- Control Accuracy: +0.5°C
- Resolution: +/-0.1°C
- Performance data (typical): Run-up to 300°C 60 min. (or less)

► Uniform, Accurate and Reliable Temperature Control

- Available with profiling or single setpoint temperature controls.
- Horizontal air flow assures uniform thermal performance under all loading conditions.
- Double plenum design with removable doors for thorough inner chamber cleaning.
- Exclusive Blue M Eterna heating elements - the most reliable available, with heavy-gauge high temperature nickel chromium wire, low-watt density for longer service life, standard air flow switch on three-phase models to protect oven and product, and premium alumina ceramic element insulators.
- Blue M one-pass air flow controls your profile, including cool down with infinitely variable control from full recirculation to full one pass, and optional motorized damper for automatic operation.
- Direct drive blower multi-blade centrifugal blower with high-volume air delivery, dynamically balanced for minimum noise.



Condensed Specifications								
Model	146 (Bench model)	206 (Bench model)	256 (Bench model)	296 (Floor model)	136 (Floor model)	336 (Floor model)	1406 (Floor model)	1506 (Floor model)
Interior Volume	1.6 cu. ft.	4.2 cu. ft.	5.8 cu. ft.	9 cu. ft.	11.0 cu. ft.	11.0 cu. ft.	24.0 cu. ft.	20.0 cu. ft.
Interior Dimensions WxDxH in(mm)	14 x 14 x 14 (356 x 356 x 356)	20 x 18 x 20 (508 x 457 x 508)	25 x 20 x 20 (635 x 508 x 508)	25 x 25 x 25 (635 x 635 x 635)	38 x 20 x 25 (965 x 508 x 635)	25 x 20 x 38 (635 x 508 x 965)	48 x 24 x 36 (1219 x 610 x 914)	37 x 25 x 37 (940 x 635 x 940)
Exterior Dimensions WxDxH in(mm)	34 x 30 x 43 (864 x 762 x 1092)	40 x 34 x 49 (1016 x 864 x 1295)	45 x 36 x 49 (1143 x 914 x 1245)	50 x 36 x 74 (1270 x 914 x 1880)	58 x 36 x 62 (1473 x 914 x 1575)	45 x 36 x 75 (1143 x 914 x 1905)	68 x 40 x 73 (1727 x 1016 x 1854)	58 x 42 x 75 (1473 x 1067 x 1905)
Machine Footprint	7.1 sq. ft.	9.4 sq. ft.	11.0 sq. ft.	11.0 sq. ft.	15.0 sq. ft.	11.0 sq. ft.	19.0 sq. ft.	17.0 sq. ft.
Electrical Service								
208 VAC 1 Ph 50/60 Hz Line current (per ph)	2.2 kW 14	3.0 kW 17	4.5 kW 25	6.0 kW 33	6.0 kW 33	6.0 kW 33	6.8 kW 38	6.8 kW 38
240 VAC 1 Ph 50/60 Hz Line current (per ph)	3.0 kW 16	4.0 kW 20	6.0 kW 29	8.0 kW 35	8.0 kW 35	8.0 kW 35	9.0 kW 44	9.0 kW 44
208 VAC 3 Ph 50/60 Hz Line current (per ph)	N/A	6.8 kW 20	9.0 kW 27	13.5 kW 40	13.5 kW 40	13.5 kW 40	18.0 kW 53	18.0 kW 53
240 VAC 3 Ph 50/60 Hz Line current (per ph)	N/A	9.0 kW 23	12.0 kW 31	18.0 kW 46	18.0 kW 46	18.0 kW 46	24.0 kW 61	24.0 kW 61
480 VAC 3 Ph 50/60 Hz Line current (per ph)	N/A	9.0 kW 12	12.0 kW 16	18.0 kW 23	18.0 kW 23	18.0 kW 23	24.0 kW 31	24.0 kW 31

All specifications are subject to change without notice.

► General Mechanical Convection Industrial Oven Specifications

- Temperature range: 15°C above ambient to 343°C (650°F)
- Uniformity: +/-1% of setpoint
- Control Accuracy: +0.5°C
- Resolution: +/-0.1°C
- Performance data (typical): Run-up to 300°C 60 min. (or less)

Empty chamber performance with exhaust closed and at rated voltage

► Standard Oven Options

- Nickel-plated wire rod or stainless steel slotted shelves
- Door switch
- Motorized intake damper (two-position or proportional)
- Welded and sealed inner chamber
- 24-hour, 7-day digital process timer
- Circular chart recorder
- Reverse door hinge
- Glass observation panel(s)
- Floorstands
- Casters
- Comm-Link RS-485 to RS-232 converter

► Engineered Oven Options

- Additional lead-in ports
- Interior light
- Oversized one-pass air flow system for faster cool down
- Redundant over-temperature protection
- Rear access door(s)
- All stainless steel exterior construction
- Special control systems
- Vertical air flow
- Space-saving stack oven design
- Trace solvent safety package
- N2 gas systems



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146 Series Inert Gas Oven

Inert Gas Mechanical Convection Ovens

The Blue M Inert Gas Mechanical Convection Oven, which we pressure-test at normal operating levels, is ideal for industrial oven applications that involve processing materials in a controlled atmosphere environment, as well as dry packaging of electronic components.

▶ Inert Gas Oven Features

- Temperature range: 15°C above ambient to 316°C (600°F)
- Uniformity: +/-1% of setpoint
- Control Accuracy: +0.5°C
- Resolution: +/-0.1°C
- Performance data (typical): Run-up to 300°C 60 min. (or less)
- Safety air flow switch on single-phase models



Condensed Specifications							
Model	146 (Bench model)	206 (Bench model)	256 (Bench model)	296 (Floor model)	136 (Floor model)	336 (Floor model)	1406 (Floor model)
Interior Volume	1.6 cu. ft.	4.2 cu. ft.	5.8 cu. ft.	11.0 cu. ft.	24.0 cu. ft.	24.0 cu. ft.	24.0 cu. ft.
Interior Dimensions WxDxH in(mm)	14 x 14 x 14 (356 x 356 x 356)	20 x 18 x 20 (508 x 457 x 508)	25 x 20 x 20 (635 x 508 x 508)	25 x 25 x 25 (635 x 635 x 635)	38 x 20 x 25 (965 x 508 x 635)	25 x 20 x 38 (635 x 508 x 965)	48 x 24 x 36 (1219 x 610 x 914)
Exterior Dimensions WxDxH in(mm)	34 x 30 x 51 (864 x 762 x 1295)	40 x 34 x 57 (1016 x 864 x 1448)	45 x 36 x 57 (1143 x 914 x 1448)	58 x 36 x 71 (1473 x 914 x 1803)	45 x 36 x 84 (1143 x 914 x 2134)	68 x 40 x 82 (1727 x 1016 x 2083)	48 x 24 x 36 (1219 x 610 x 914) 68 x 40 x 73 (1727 x 1016 x 1854)
Machine Footprint	7.1 sq. ft.	9.4 sq. ft.	11.0 sq. ft.	15.0 sq. ft.	11.0 sq. ft.	19.0 sq. ft.	19.0 sq. ft.
Electrical Service							
208 VAC 1 Ph 50/60 Hz Line current (per ph)	2.2 kW 14	3.0 kW 17	4.5 kW 25	6.0 kW 33	6.0 kW 33	6.0 kW 38	6.8 kW 38
240 VAC 1 Ph 50/60 Hz Line current (per ph)	3.0 kW 16	4.0 kW 20	6.0 kW 29	8.0 kW 35	8.0 kW 35	8.0 kW 44	9.0 kW 44
208 VAC 3 Ph 50/60 Hz Line current (per ph)	N/A	6.8 kW 20	9.0 kW 27	13.5 kW 40	13.5 kW 40	13.5 kW 53	18.0 kW 53
240 VAC 3 Ph 50/60 Hz Line current (per ph)	N/A	9.0 kW 23	12.0 kW 31	18.0 kW 46	18.0 kW 46	18.0 kW 61	24.0 kW 61
480 VAC 3 Ph 50/60 Hz Line current (per ph)	N/A	9.0 kW 12	12.0 kW 16	18.0 kW 23	18.0 kW 31	18.0 kW 31	24.0 kW 31

All specifications are subject to change without notice.

► General Specifications

- Temperature range: 15°C above ambient to 316°C (600°F)
- Uniformity: +/-1% of setpoint
- Control Accuracy: +0.5°C
- Resolution: +/-0.1°C
- Performance data (typical): Run-up to 300°C 60 min. (or less)

Empty chamber performance with exhaust closed and at rated voltage

► Inert Gas Oven Options

- Stainless steel slotted shelves
- 24-hour, 7-day digital process timer
- Circular chart recorder
- Reverse door hinge
- Floorstands
- Casters
- Comm-Link RS-485 to RS-232 computer interface
- Control and monitor software

► Engineered Oven Options

- Lead-in pipes
- Redundant over-temperature protection
- Rear access door(s)
- All stainless steel exterior construction
- Special control systems
- Space-saving stack oven design



»»Blue M 146 Series Clean Room Oven

Clean Room Mechanical Convection Ovens

The Blue M Clean Room Mechanical Convection Oven is designed for a number of industrial oven applications, including curing polyamide coatings, moisture drying, baking photo-resist coating and various pharmaceutical processes.

▶ Mechanical Convection Oven Features

- Heavy-gauge steel exterior and stainless steel interior.
- All exterior panels are at least 16 gauge.
- Fiberglass insulation - 4 full inches minimizes heat loss
- Baked-on powder-coated white enamel finish for long-lasting corrosion protection
- Blue M silicone door seal design for positive sealing of door
- Removable one-piece stainless steel interior features reinforced 304 stainless steel
- All welded and sealed construction assures continuously low particle counts
- Chamber vent port for exhausting of process by-products
- Suitable for inert gas purge to eliminate moisture and vent out contaminants. Adjustable inert gas flow meter.
- Safety air flow switch on single-phase models.



Condensed Specifications					
Model	146 (Bench model)	206 (Bench model)	256 (Bench model)	336 (Floor model)	1406 (Floor model)
Interior Volume	1.2 cu. ft.	3.4 cu. ft.	4.9 cu. ft.	9.4 cu. ft.	21.6 cu. ft.
Interior Dimensions WxDxH in(mm)	10.5 x 14 x 13.7 (267 x 356 x 348)	16.5 x 18 x 19.7 (419 x 457 x 500)	21.5 x 20 x 19.7 (546 x 508 x 500)	21.5 x 20 x 37.7 (546 x 508 x 958)	43.8 x 23.7 x 35.7 (1113 x 602 x 907)
Exterior Dimensions WxDxH in(mm)	29 x 29.2 x 45 (737 x 742 x 1143)	35 x 33.2 x 51 (880 x 843 x 1295)	40 x 33.2 x 51 (1016 x 843 x 1295)	40 x 34.6 x 77.2 (1016 x 879 x 1961)	63 x 38.6 x 75.2 (1600 x 980 x 1910)
Machine Footprint	5.9 sq. ft.	8.1 sq. ft.	9.8 sq. ft.	9.6 sq. ft.	16.9 sq. ft.
Electrical Service					
208 VAC 1 Ph 50/60 Hz Line current (per ph)	2.2 kW 14	3.0 kW 17	4.5 kW 25	6.0 kW 33	6.8 kW 38
240 VAC 1 Ph 50/60 Hz Line current (per ph)	3.0 kW 16	4.0 kW 20	6.0 kW 29	8.0 kW 35	9.0 kW 44
208 VAC 3 Ph 50/60 Hz Line current (per ph)	N/A	6.8 kW 20	9.0 kW 27	13.5 kW 40	18.0 kW 53
240 VAC 3 Ph 50/60 Hz Line current (per ph)	N/A	9.0 kW 23	12.0 kW 31	18.0 kW 46	24.0 kW 61
480 VAC 3 Ph 50/60 Hz Line current (per ph)	N/A	9.0 kW 12	12.0 kW 16	18.0 kW 23	24.0 kW 31

All specifications are subject to change without notice.

► General Mechanical Convection Industrial Oven Specifications

- Temperature range: 15°C above ambient to 250°C
- Uniformity: +/-1% of setpoint
- Control Accuracy: +0.5°C
- Resolution: +/-0.1°C

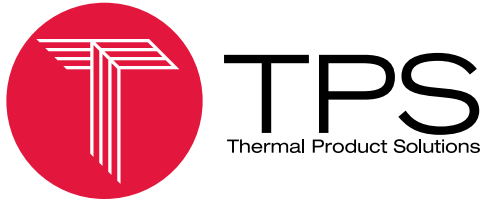
Empty chamber performance with exhaust closed and at rated voltage

► Clean Room Oven Options

- Stainless steel slotted shelves
- 24-hour, 7-day digital process timer
- Circular chart recorder
- Reverse door hinge
- Floorstands
- Casters
- Comm-Link RS-485 to RS-232 converter

► Engineered Oven Options

- Redundant over-temperature protection
- All stainless steel exterior construction
- Special control systems
- Space-saving stack oven design
- Flanged for through-the-wall mounting
- Class 1000 clean room assembly and packaging



»»Blue M ASTM Testing Convection Oven

ASTM Testing Mechanical Convection Ovens

The Blue M ASTM Testing Mechanical Convection Oven is ideal for a number of industrial oven applications, including ASTM testing, epoxy curing, moisture drying, UL testing, aging of electronic components and devices, and other processes and testing requirements.

▶ **General ASTM Testing Mechanical Convection Oven Specifications**

- Temperature range: 15°C above ambient to 343°C (650°F)
- Uniformity: +/-1% of setpoint
- Control Accuracy: +0.5°C
- Resolution: +/-0.1°C
- Performance data (typical): Run-up to 300°C 60 min. (or less)

▶ **Uniform, Accurate and Reliable Temperature Control**

- Available with profiling or single setpoint temperature controls.
- Horizontal air flow assures uniform thermal performance under all loading conditions.
- Double plenum design with removable doors for thorough inner chamber cleaning.
- Exclusive Blue M Eterna heating elements - the most reliable available, with heavy-gauge high-temperature nickel chromium wire, low-watt density for longer service life, standard air flow switch on three-phase models to protect oven and product, and premium alumina ceramic element insulators.
- Blue M one-pass air flow controls your profile, including cool down with infinitely variable control from full recirculation to full one pass, and optional motorized damper for automatic operation.
- Direct drive blower multi-blade centrifugal blower with high-volume air delivery, dynamically balanced for minimum noise.



Condensed Specifications								
Model	146 (Bench model)	206 (Bench model)	256 (Bench model)	296 (Floor model)	136 (Floor model)	336 (Floor model)	1406 (Floor model)	1506 (Floor model)
Interior Volume	1.6 cu. ft.	4.2 cu. ft.	5.8 cu. ft.	9 cu. ft.	11.0 cu. ft.	11.0 cu. ft.	24.0 cu. ft.	20.0 cu. ft.
Interior Dimensions WxDxH in(mm)	14 x 14 x 14 (356 x 356 x 356)	20 x 18 x 20 (508 x 457 x 508)	25 x 20 x 20 (635 x 508 x 508)	25 x 25 x 25 (635 x 635 x 635)	38 x 20 x 25 (965 x 508 x 635)	25 x 20 x 38 (635 x 508 x 965)	48 x 24 x 36 (1219 x 610 x 914)	37 x 25 x 37 (940 x 635 x 940)
Exterior Dimensions WxDxH in(mm)	34 x 30 x 43 (864 x 762 x 1092)	40 x 34 x 49 (1016 x 864 x 1295)	45 x 36 x 49 (1143 x 914 x 1245)	50 x 36 x 74 (1270 x 914 x 1880)	58 x 36 x 62 (1473 x 914 x 1575)	45 x 36 x 75 (1143 x 914 x 1905)	68 x 40 x 73 (1727 x 1016 x 1854)	58 x 42 x 75 (1473 x 1067 x 1905)
Machine Footprint	7.1 sq. ft.	9.4 sq. ft.	11.0 sq. ft.	11.0 sq. ft.	15.0 sq. ft.	11.0 sq. ft.	19.0 sq. ft.	17.0 sq. ft.
Electrical Service								
208 VAC 1 Ph 50/60 Hz Line current (per ph)	2.2 kW 14	3.0 kW 17	4.5 kW 25	6.0 kW 33	6.0 kW 33	6.0 kW 33	6.8 kW 38	6.8 kW 38
240 VAC 1 Ph 50/60 Hz Line current (per ph)	3.0 kW 16	4.0 kW 20	6.0 kW 29	8.0 kW 35	8.0 kW 35	8.0 kW 35	9.0 kW 44	9.0 kW 44
208 VAC 3 Ph 50/60 Hz Line current (per ph)	N/A	6.8 kW 20	9.0 kW 27	13.5 kW 40	13.5 kW 40	13.5 kW 40	18.0 kW 53	18.0 kW 53
240 VAC 3 Ph 50/60 Hz Line current (per ph)	N/A	9.0 kW 23	12.0 kW 31	18.0 kW 46	18.0 kW 46	18.0 kW 46	24.0 kW 61	24.0 kW 61
480 VAC 3 Ph 50/60 Hz Line current (per ph)	N/A	9.0 kW 12	12.0 kW 16	18.0 kW 23	18.0 kW 23	18.0 kW 23	24.0 kW 31	24.0 kW 31

All specifications are subject to change without notice.

► General Mechanical Convection Industrial Oven Specifications

- Temperature range: 15°C above ambient to 343°C (650°F)
- Uniformity: +/-1% of setpoint
- Control Accuracy: +0.5°C
- Resolution: +/-0.1°C
- Performance data (typical): Run-up to 300°C 60 min. (or less)

Empty chamber performance with exhaust closed and at rated voltage

► Standard Oven Options

- Nickel-plated wire rod or stainless steel slotted shelves
- Door switch
- 24-hour, 7-day digital process timer
- Circular chart recorder
- Reverse door hinge
- Glass observation panel(s)
- Floorstands
- Casters
- Comm-Link RS-485 to RS-232 converter

► Engineered Oven Options

- Additional lead-in ports
- Interior light
- Redundant over-temperature protection
- Rear access door(s)
- All stainless steel exterior construction
- Special control systems
- Space-saving stack oven design



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Lab Ovens

Blue M Lab Ovens - LO Series Mechanical Convection

Designed for laboratory applications such as moisture drying, curing, baking, aging and general testing. These convection ovens feature an excellent balance of value and features. The ovens have been designed for convenience and appearance in the workplace and include ergonomic handles and controls, with a powder-coated steel exterior. Components are high quality, to ensure years of reliable service.

► Designed for testing to many standards, including JB/T5520-91.2 Configurations available

Economy Model

- Timer Standard

Premium Model

- Programmable Temperature Controller
- 2" Port

► Features

- Stainless steel interior with powder-coated exterior for durability
- Adjustable shelving provides flexible workspace configuration



The Blue M Lab Oven Difference

Long life tube-style heating elements last over twice as long as open coil or wire elements

- Superior heat ramp-up and recovery

Extra Thick Insulation

(up to a full 1" thicker than competitors)

- Cooler outer skin temperature
- Superior temperature uniformity
- Greener operation costs less to operate

Horizontal Air flow Design

- Provides more efficient and consistent heating
- Protects heating elements from contamination and spills

Over-temperature protection is standard on all Blue M lab ovens.

Model	LO-27	LO-90	LO-136	LO-225	LO-430	LO - 850
Interior Dimensions W x D x H	300 x 300 x 300mm 11.8 x 11.8 x 11.8in	450 x 450 x 450mm 17.7 x 17.7 x 17.7in	550 x 450 x 550mm 21.6 x 17.7 x 21.6in	600 x 500 x 750mm 23.6 x 19.6 x 29.5in	520 x 660 x 1300mm 20.5 x 26 x 51.2in	790 x 710 x 1450mm 31.1 x 28 x 57.1in
Exterior Dimensions W x D x H	500 x 540 x 795mm 19.7 x 21.3 x 31.3in	650 x 690 x 945mm 25.6 x 27.2 x 37.2in	750 x 690 x 1045mm 29.5 x 27.2 x 41.1in	800 x 740 x 1245mm 31.5 x 29.1 x 49in	750 x 850 x 1860mm 29.5 x 33.5 x 73.2in	1020 x 900 x 2010mm 40.2 x 35.4 x 79.1in
Workspace	0.95 cu. ft.	3.2 cu. ft.	4.8 cu. ft.	7.9 cu. ft.	15 cu. ft.	30 cu. ft.
Heating Method	Mechanical Convection					
Air Flow	Horizontal					
Interior Material	Stainless Steel					
Temp. Range	Ambient +20°F to +500°F Ambient +10°C to +260°C					
Temp. Uniformity	≤ ± 3°C					
Control Tolerance	≤ ± 1°C					
Heating Rate	≤ 100min (Ambient Temp. to Max Temp.)					
Control Interface	High-Quality Digital PID Temp. Controller					
Temp. Control Mode	Setpoint Operation					
Power Supply	115V 1Ph 60Hz	115V 1Ph 60Hz	230V 1Ph 60Hz	230V 1Ph 60Hz	230V 1Ph 60Hz	230V 1Ph 60Hz
Power	1.2kW	1.5kW	2kW	3kW	7kW	11kW
Shelves	2	2	2	2	2	2

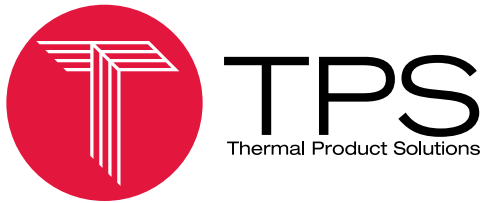
All specifications are subject to change without notice.

► Options

- Additional perforated shelves

► Performance

- Heating Method: Mechanical Convection
- Air flow: Horizontal
- Temperature Uniformity: Less than or equal to +/- 3°C
- Temperature Fluctuation: Less than or equal to +/- 1°C
- Heating Rate: Less than or equal to 100 Minutes from Ambient to Max. Temp.
- Control Interface: High-quality digital PID temperature controller
- Temperature Control Mode: Setpoint operation



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Gravity Ovens

Blue M Gravity Ovens - GO Series

Blue M Gravity Ovens are value-priced gravity convection ovens for many industrial uses such as drying and baking. Gravity Ovens are designed for applications where a fan or other air flow would disturb the thermal process, such as processing of lightweight materials or powders. Gravity Ovens are designed for applications that require less temperature uniformity than other types of mechanical convection ovens.

Each gravity oven model generates a unique natural air convection supply through perforated stainless steel shelves to achieve temperature uniformity without blowers.

► Economy Model

- Timer Standard



► Features

- Stainless steel interior with powder-coated exterior for durability
- Vertical up-gravity convection air flow allows for tighter temperature uniformity
- Adjustable shelving provides flexible workspace configuration
- 2 Perforated shelves for increased air flow and uniformity
- Independent and adjustable over-temperature protection provides extra assurance against damage to load and oven
- Stainless steel interior
- Range of sizes
- Over-temperature protection
- Maximum temperature: 260°C
- Minimum temperature: ambient +10°C

Model	GO-27	GO-90	GO-136	GO-225
Interior Dimensions W x D x H	300 x 300 x 300mm 11.8 x 11.8 x 11.8in	450 x 450 x 450mm 17.7 x 17.7 x 17.7in	550 x 450 x 550mm 21.6 x 17.7 x 21.6in	600 x 500 x 750mm 23.6 x 19.6 x 29.5in
Exterior Dimensions W x D x H	500 x 540 x 795mm 19.7 x 21.3 x 31.3in	650 x 690 x 945mm 25.6 x 27.2 x 37.2in	750 x 690 x 1045mm 29.5 x 27.2 x 41.1in	800 x 740 x 1245mm 31.5 x 29.1 x 49in
Workspace	0.95 cu. ft.	3.2 cu. ft.	4.8 cu. ft.	7.9 cu. ft.
Heating Method	Vertical Up-Gravity Convection			
Interior Material	Stainless Steel			
Temp. Range	Ambient +20°F to +500°F Ambient +10°C to +260°C			
Temp. Uniformity	≤ ± 3%			
Control Tolerance	≤ ± 1°C			
Heating Rate	≤ 100min (Ambient Temp. to Max Temp.)			
Control Interface	High-Quality Digital PID Temp. Controller			
Temp. Control Mode	Setpoint Operation			
Power Supply	115V 1Ph 60Hz	115V 1Ph 60Hz	230V 1Ph 60Hz	230V 1Ph 60Hz
Power	1.2kW	1.5kW	2kW	3kW
Shelves	2	2	2	2
Shelf Spacing	0.95"	1.2"	1.5"	2"
Maximum Shelves	3	4	5	6
Available Slots	12	12	12	12

► Options

- Additional perforated shelves

► Performance

- Heating Method: Gravity Convection
- Air flow: Vertical Up
- Temperature Uniformity: Less than or equal to +/- 3%
- Temperature Fluctuation: Less than or equal to +/- 1°C
- Heating Rate: Less than or equal to 100 Minutes from Ambient to Max. Temp.
- Control Interface: High-quality digital PID temperature controller
- Temperature Control Mode: Setpoint operation

All specifications are subject to change without notice.



TPS
Thermal Product Solutions

»» Blue M

Burn-In Ovens

Blue M Burn-In Ovens

Blue M designs and builds trademark tough industrial burn-in ovens with uniform, reliable temperature control and numerous standard features. These industrial batch ovens are ideal for burn-in applications for electronic components, devices and assemblies.

► General Industrial Burn-In Oven Specifications

- Temperature range: 15°C above ambient to 300°C (572°F)
- Uniformity: 1% of setpoint (empty chamber at 125°C)
- Control Accuracy: 1.0°C
- Resolution: 0.1°C
- Wattage dissipation: at 125°C, 60Hz, 6,600 Watts; at 125°C, 50Hz; 5,500 Watts



Condensed Specifications						
Model	9F (Horizontal Air flow)	9F (Vertical Air flow)	16F (Horizontal Air flow)	165F (Vertical Air flow)	32F (Horizontal Air flow)	32F (Vertical Air flow)
Interior Volume	9.0 cu.ft.	9.0 cu.ft.	16.6 cu.ft.	16.6 cu.ft.	33.3 cu.ft.	33.3 cu.ft.
Interior Dims. WxDxH in(cm)	25 x 25 x 25 (63.5 x 63.5 x 63.5)	25 x 25 x 25 (63.5 x 63.5 x 63.5)	24 x 25 x 48 (61 x 63.5 x 121.9)	48 x 25 x 24 (121.9 x 63.5 x 61)	48 x 25 x 48 (121.9 x 63.5 x 121.9)	48 x 25 x 48 (121.9 x 63.5 x 121.9)
Exterior Dimensions WxDxH in(cm)	41 x 28 x 85 (104.1 x 71.1 x 215.9)	58 x 38 x 68 (147.3 x 96.5 x 172.7)	42 x 37 x 84 (106.7 x 94 x 213.4)	83 x 37 x 58 (210.8 x 94 x 147.3)	66 x 37 x 84 (167.6 x 94 x 213.4)	83 x 37 x 82 (210.8 x 94 x 208.3)
Machine Footprint	10.8 sq.ft.	15.3 sq.ft.	10.7 sq.ft.	21.3 sq.ft.	16.9 sq.ft.	21.3 sq.ft.
Electrical Service						
208 VAC 3Ph 50/60 Hz Line current per Ph	7.5 kW 26 amps	7.5 kW 26 amps	11.0 kW 40 amps	11.0 kW 40 amps	14 kW 48 amps	14 kW 48 amps
240 VAC 3Ph 50/60 Hz Line current per Ph	10.0 kW 29 amps	10.0 kW 29 amps	14 kW 47 amps	14 kW 47 amps	18.5 kW 54 amps	18.5 kW 54 amps
480 VAC 3Ph 50/60 Hz Line current per Ph	10.0 kW 15 amps	10.0 kW 15 amps	11 kW 18 amps	11 kW 18 amps	14.0 kW 22 amps	14.0 kW 22 amps

Performance Data (Typical)		
Live Load	Run-up time to 125°C (257°F)	Cool-down time
1,500 Watts	8 minutes	to 40°C: 30 minutes
3,000 Watts	6 minutes	to 50°C: 40 minutes
5,000 Watts	5.5 minutes	to 70°C: 30 minutes

Data based on 25°C (77°F) - at ambient rated voltage -
Meets Mil. 833C, Method 1015.4

All specifications are subject to change without notice.

► Oven Features

- Heavy-gauge steel exterior and stainless steel interior, all exterior panels are at least 16 gauge
- All welded and sealed construction assures trace oxygen levels and eliminates gas migration into insulation
- 4" fiberglass insulation
- Baked-on powder-coated enamel finish
- Silicone door seal design for positive sealing of door
- Clean side walls for unobstructed side-by-side installation

► Standard Batch Oven Options

- 10" circular chart recorder
- Floorstand for BI-9 and BI-9V models
- Lead-in ports

► Engineered Oven Options

- Rear access door(s)
- Redundant over-temperature protection
- Welded and steel interior
- N2 purge

► General Industrial Burn-In Oven Specifications:

- Temperature range: 15°C above ambient to 300°C (572°F)
 - Uniformity: 1% of setpoint (empty chamber at 125°C)
 - Control Accuracy: 1.0°C
 - Resolution: 0.1° C
 - Wattage dissipation: at 125°C, 60Hz, 6,600 Watts; at 125°C, 50Hz, 5,500 Watts
- Empty chamber performance with intake and exhaust closed at rated voltage*



TPS
Thermal Product Solutions

»»Blue M

Stacked Ovens

STL-05 Stacked Ovens

Blue M stacked industrial ovens have earned a long-standing reputation for exceptional performance, long service life and ease of operation over a broad range of applications. The STL series integrally stacked Blue M mechanical convection oven is suitable for curing, drying, and baking in semiconductor, electronic, and many other industrial applications.

► General Specifications

- Temperature range: 15°C above ambient to 343°C (650°F)
- Uniformity: +/-1% of setpoint
- Control Accuracy: +0.5°C
- Resolution: +/-0.1°C



Condensed Specifications	
Model	STL-05 Stacked Oven
Interior Volume (per oven)	5.8 cu. ft. (164 l)
Interior Dimensions WxDxH	25 x 20 x 20 inches 635 x 508 x 508 mm
Exterior Dimensions WxDxH	52.3 x 49 x 74 inches 1328 x 1245 x 1880 mm
Machine Footprint	17.75 sq. ft. 1.65 sq. meters
Electrical Service	
208 VAC 1 Ph 50/60 Hz Line current (per ph)(per oven)	4.2 kW 25 Amps
208 VAC 1 Ph 50/60 Hz Line current (per ph)(per oven)	6.0 kW 29 Amps
208 VAC 3 Ph 50/60 Hz Line current (per ph)(per oven)	9.0 kW 27 Amps
240 VAC 3 Ph 50/60 Hz Line current (per ph)(per oven)	12.0 kW 31 Amps
480 VAC 3 Ph 50/60 Hz Line current (per ph)(per oven)	12.0 kW 16 Amps

All specifications are subject to change without notice.

▶ STL-05 Oven Options

- 24-hour, 7-day digital process timer
- Circular or strip chart recorder
- RS232/RS485 communications converter
- Light tower
- Emergency power off switch (EMO)
- Spec View data acquisition software
- NIST traceable certificate of calibration
- Dry box oven with N2 gas system

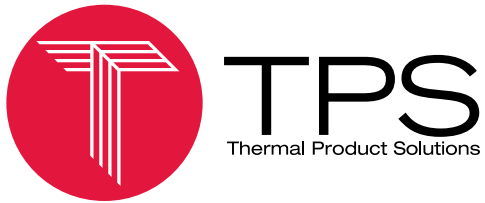
▶ Engineered Oven Options

- Lead-in pipes
- Redundant over-temperature protection
- All stainless steel exterior construction
- Special control systems
- Door interlocks
- Class 1000 clean room assembly and packaging
- Standard air model
- Customer specified options as factory proposed and authorized
- Reverse door hinges
- 5-point thermocouple survey
- Temp. deviation alarms
- Filtered process air/atmosphere intake
- N2 low-flow switch alarm
- N2 low-pressure switch alarm

▶ General Specifications

- Temperature range: 15°C above ambient to 343°C (650°F)
- Uniformity: +/-1% of setpoint
- Control Accuracy: +0.5°C
- Resolution: +/-0.1°C

Empty chamber performance at rated voltage



»»Blue M

Friction Aire Safety Ovens

Friction Aire Safety Ovens

Blue M Friction Aire® ovens provide a controlled heat source without heating elements, which eliminates atmospheric explosions and ignitions when working with hazardous Class 1, Group D materials. Class 1 atmospheres contain flammable vapors, and Group D materials include many solvents commonly used in finishing applications, such as lacquers and paints.

Underwriter's Laboratories (UL) lists three models of the Friction-Aire family.

► Features:

- 100% straight-line proportional temperature performance
- High-velocity air flow system
- Blower-generated heat
- No hot spots, no points that exceed the indicated air temperature
- Setpoint control
- Over-temperature protection system
- Temperature-sensitive bellows
- By-pass damper vane
- Sensing bulb
- Fast cool-down



Model	Inside Dimensions inches (cm) W x D x H	Overall Dimensions inches (cm) W x D x H	HP	¹ Approx Heating Power (Watts)	Cubic Feet Capacity	Shipping Weight Lbs. (Kg)
HS-1002	14 x 17 x 12 (35 x 43 x 31)	37 x 33 x 48 (93 x 84 x 120)	1	500	1.3	465 (211)
HS-1202	25 x 20 x 20 (63 x 51 x 51)	42 x 39 x 63 (106 x 98 x 159)	2	1300	5.2	800 (363)
HS-3802	38 x 25 x 25 (95 x 63 x 63)	57 x 44 x 68 (144 x 111 x 172)	3	2000	13.7	1300 (590)

¹ Voltage - all models: 208/240/480 V 3-Phase / 60Hz. AC Chambers will operate satisfactorily on 208 V 3-Phase / 60Hz. AC when motor is connected for 240 V 3-Phase /60Hz AC

Model	Inside Dimensions inches (cm) W x D x H	Overall Dimensions inches (cm) W x D x H	HP	¹ Approx Heating Power (Watts)	Cubic Feet Capacity	Shipping Weight Lbs. (Kg)
HS-362-1 ²	37 x 37 x 48 (93 x 93 x 120)	66 x 58 x 91 (167 x 147 x 231)	10	6500	36	2200 (1000)

¹ Voltage -all models: 208/240/480 V 3- Phase/ 60Hz. AC Chambers will operate satisfactorily on 208 V 3-Phase / 60Hz. AC when motor is connected for 240 V3-Phase /60Hz. AC

² Bench Model

Model	Inside Dimensions inches (cm) W x D x H	Overall Dimensions inches (cm) W x D x H	HP	¹ Approx Heating Power (Watts)	Cubic Feet Capacity	Shipping Weight Lbs. (Kg)
HS-1004-1	14 x 17 x 12 (35 x 43 x 31)	37 x 33 x 48 (93 x 84 x 120)	1	600	1.3	465 (211)
HS-1204-1	25 x 20 x 20 (63 x 51 x 51)	42 x 39 x 63 (106 x 98 x 159)	3	2000	5.2	800 (363)
HS-3804-1	38 x 25 x 25 (95 x 63 x 63)	57 x 44 x 68 (144 x 111 x 172)	5	3000	13.7	1300 (590)

¹ Voltage -all models: 208/240/480 V 3-Phase/ 60Hz AC Chambers will operate satisfactorily on 208 V 3-Phase / 60Hz AC when motor is connected for 240 V 3-Phase /60Hz AC

Typical Industrial Safety Oven Operating Characteristics Models HS-1002, HS-1202 and HS-3802

Temperature range: +20°C above ambient to +150°C (302°F)
Typical air temperature uniformity at +100°C: 0.5°C
Run-up time: (no load) to +150°C: 120 minutes
Cool-down time: (no load) to +50°C: 30 minutes
Control accuracy: 0.5°C

Drift: (over 24-hour period)
at +50°C: 1.0°C
at +100°C: 0.75°C
at +150°C: 0.50°C

UL Listed

Average velocity: (adjustable)
Maximum: 400/FPM
Minimum: 100/FPM

Model HS-362

Temperature range: +20°C above ambient to +150°C (302°F)
Typical air temperature uniformity at +100°C: 0.5°C
Typical air temperature uniformity at +150°C: 1.0°C
Run-up time: (no load) to +150°C: 60 minutes
Cool-down time: (no load) to +50°C: 30 minutes
Control accuracy: 0.5°C

Not UL Listed

Drift: (over 24-hour period)
at +50°C: 1.0°C
at +100°C: 0.75°C
at +150°C: 0.50°C

Average velocity: (adjustable)
Maximum: 500/FPM
Minimum: 200/FPM

Models HS-1004, HS-1204 and HS-3804

Temperature range: +20°C above ambient to +260°C (500°F)
Typical air temperature uniformity at +100°C: 0.5°C
Typical air temperature uniformity at +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

Not UL Listed

Drift: (over 24-hour period)
at +50°C: 1.0°C
at +100°C: 0.75°C
at +150°C: 0.50°C
at +200°C: 0.50°C

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

Three models have been listed by Underwriter's Laboratories for operation in Class 1, 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 all of the time. 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 because any surface the liquid encounters is only as hot as the interior environment.

This industrial safety oven is UL listed for Class I Group D operation and is the first and only industrial safety oven to have this listing.

All specifications are subject to change without notice.



»»Blue M

Class A Batch Ovens

Class A Batch Ovens

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.



Bench Model					
Model Number	Inside Dimensions Inches (cm) W x D x H	Overall Dimensions Inches (cm) W x D x H	Element kW	Line Amps	Cubic Feet Capacity
DC-256A-FHP-1	25 x 20 x 20 (63 x 51 x 51)	49 x 37 x 62 (124 x 94 x 157)	9 / 12	27 / 31	5.8
Floor Model					
DC-166A-FHP-1	24 x 24 x 48 (61 x 61 x 122)	55 x 45 x 86 (140 x 114 x 218)	13.5 / 18	44 / 50	16
DC-246A-FHP-1	36 x 24 x 48 (91 x 61 x 122)	67 x 45 x 86 (170 x 114 x 218)	16 / 21	51 / 58	24
DC-326A-FHP-1	48 x 24 x 48 (122 x 61 x 122)	79 x 45 x 86 (201 x 114 x 218)	20 / 27	63 / 72	32
DC-366A-FHP-1	36 x 36 x 48 (91 x 91 x 122)	67 x 54 x 86 (170 x 137 x 218)	20 / 27	63 / 72	36
DC-606A-FHP-1	36 x 48 x 60 (91 x 122 x 152)	80 x 69 x 96 (203 x 175 x 244)	26 / 34	86 / 100	60
DC-806A-FHP-1	48 x 48 x 60 (122 x 122 x 152)	92 x 69 x 96 (234 x 175 x 244)	30 / 40	100 / 115	80
DC-966A-GHP-1	48 x 48 x 72 (122 x 122 x 183)	92 x 69 x 108 (234 x 175 x 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.

General Class A Batch Oven 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% of span

The industrial batch oven design has exceptional exhaust capabilities for handling solvents. The design of the chamber concedes that the element temperature may be greater than the auto-ignition point of some flammable materials, but a high exhaust rate mitigates the auto-mitigation risk by maintaining a non-explosive mixture. 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.

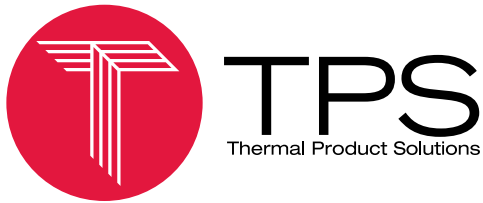
These Class A industrial batch ovens have Pro-Tronix I solid-state digital indicating control with time proportioning zero crossover performance. Setting and indication accuracy is 1/2%. Large LED display indicates both setpoint and actual chamber temperature at the touch of a button. Separate F.M. approved indicating type instrument provides over-temperature protection.

► Features:

- Heavy-gauge, cold-rolled reinforced steel
- High-temperature aluminum finish
- 4" fiberglass insulation
- Silicone sealed doors have welded and insulated double-wall construction
- Eterna™ heater banks
- Direct drive motor / blower system
- Forced exhaust system
- Air flow switch
- Adjustable purge timer
- Blow-out relief panel
- 2" fire extinguisher port

► Options:

- Stainless steel slotted shelves
- Circular chart recorder
- PRO-550 controller



»» Blue M

Blue M CSP Safety Ovens

CSP Safety Ovens

This small, cost-effective industrial safety oven meets NFPA Bulletin 86 requirements for handling solvents and expelling hazardous vapor. Ideal for industrial safety oven applications such as flash curing paint samples, drying solvents, curing epoxies or adhesives. This industrial safety oven is also useful in laboratories that require a variety of product loads.

► Features:

- CSP industrial safety oven operating range
- Rugged industrial safety oven construction
- Reliable industrial safety oven heating elements
- Volatile fume exhaust system
- Safety relief panel
- Advanced controls
- Safety purge timer
- Independent over-temperature protection
- Flexible product loading



	Single oven configuration (horizontal air flow)	Single oven configuration (vertical air flow)	Stacked oven configuration (vertical air flow)
Work space dimensions W x D x H inches (mm)	18.9 x 15 x 18 (480 x 381 x 457.2)	18 x 15 x 18.9 (457.2 x 381 x 480)	18 x 15 x 18.9 (457.2 x 381 x 480)
# of work spaces	One (1)	One (1)	Two (2)
Work space volume cu. ft. (liters)	3.0 (85)	3.0 (85)	6.0 (170) total
Overall dimensions W x D x H inches (mm)	31 x 35 x 50 (787.4 x 889 x 1270)	45 x 35 x 40 (1143 x 889 x 1016)	45 x 35 x 71 (1143 x 889 x 1803.4)
Machine footprint	7.5 sq. ft.	10.9 sq. ft.	10.9 sq. ft.
Machine weight Lbs. (kg)	300 (136.4)	300 (136.4)	600 (272.8)
Floor load	40 lbs./sq. ft.	27.5 lbs./sq. ft.	55 lbs./sq. ft.

► **Options:**

- Promaster I profiling controller with digital communications
- Nickel-plated or stainless steel shelves
- Digital process timer
- Circular chart recorder
- Floor stand
- Fused power disconnect mounted on unit

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

Temperature Range: +10°C above ambient to +343°C (+650°F)

Temperature uniformity: 1.5% of setpoint after stabilization with exhaust

Control accuracy: 0.25% of setpoint

All specifications are subject to change without notice.



»» Blue M ESP-400 Series Mechanical Convection Ovens

ESP-400 Series Mechanical Convection Ovens

The Blue M ESP-400 Mechanical Convection Horizontal Air flow Oven provides reliable performance, making it ideal for constant temperature work and for applications where fast run-up and cool-down rates are required.

A one-pass air flow system allows incoming air to pass over the heaters and through the work chamber only once, if desired, enabling fast cool down or quickly venting non-hazardous fumes or moisture. The horizontal air flow offers excellent temperature uniformity.

The setpoint and process variables appear on a bright, easy-to-read LED display. Setpoints are adjustable to 1°C resolution.

The main control regulates temperature by switching heater power through a solid state relay circuit.

An FM-approved independent over-temperature protection system is provided. This control disconnects heater and motor power and alarms an audible buzzer until manually reset by the user.



► Oven Features

- All-welded, heavy-duty exterior - heavy-gauge, reinforced cold-rolled steel
- Stainless steel interior corrosion resistant, including inner face of door
- Adjustable shelves - nickel-plated wire type with 7 shelf positions
- Baked-on powder-coated enamel finish for long-lasting corrosion protection
- Fiberglass insulation to ensure moderate cabinet skin temperature
- Heavy-duty door - double-wall, insulated construction

► Uniform, Accurate and Reliable Temperature Control

- Available with profiling or single setpoint temperature controls
- Adjustable one-pass air flow system - tempered air passes over heater and through chamber only once if necessary - readily adjusted to suit a broad range of product loads and operating requirements
- Air circulation - quality ball bearing motor and balanced multi-blade blower
- Exclusive Blue M Eterna™ heating elements with nichrome and ceramic heater bank provides quick response - low-watt density assures long life

Specifications - 260°C Mechanical Convection Ovens
General Purpose, Painted Finish

Model	Electrical	Cabinet Finish	Interior Dim.	Exterior Dim.
ESP 400	120V 50-60Hz	Painted	19 x 15 x 18" 480 x 380 x 450 mm	32 x 24 x 37" 800 x 610 x 940 mm
	208V 50-60Hz	Painted	19 x 15 x 18" 480 x 380 x 450 mm	32 x 24 x 37" 800 x 610 x 940 mm
	240V 50-60Hz	Painted	19 x 15 x 18" 480 x 380 x 450 mm	32 x 24 x 37" 800 x 610 x 940 mm
Indication Resolution		1°C		
Run-up Time to 260°C (no load/no exhaust)		20 min. at 240V* 30 min. at 208V* 60 min. at 120V* * Empty chamber performance with intake and exhaust closed at rated voltage		

All specifications are subject to change without notice.

► **Oven Options**

- Welded and sealed inner chamber (vapor tight)
- Nickel-plated wire rod or stainless steel slotted shelves
- Glass observation panel
- Floorstand
- Circular chart recorder



»»Blue M

Industrial Batch Ovens

Batch and Batch Truck Ovens

The Industrial Batch Ovens have for years been meeting a variety of test and production applications. Their reliability and fine performance have made them the choice of many industries.

▶ Oven Features

- Heavy-gauge steel exterior and interior panels
- Welded 14 and 16 gauge
- Cold-rolled reinforced steel
- Stainless steel-reinforced 304
- Fiberglass insulation - 4 full inches minimizes heat loss
- Baked-on powder-coated enamel finish
- Double-wall, insulated doors
- Silicone rubber seal with double doors on 48-inch and larger models
- Side-mounted control compartment for easier control access (60, 75, 80 and 96 cu. ft. models only)
- Manually adjustable intake/exhaust system

▶ Oven Options

- Welded and sealed inner chamber (vapor tight)
- Nickel-plated wire rod or stainless steel slotted shelves
- Glass observation panel
- Floorstand
- Circular chart recorder

▶ Uniform, Accurate and Reliable Temperature Control

- Profiling or single setpoint controls
- Horizontal air flow
- Low waft density
- One-pass air flow
- Direct drive blower



Condensed Specifications Top Mounted Controls

Model	246		326		366		606	
Interior Volume	24.0 cu. ft.		32.0 cu. ft.		36.0 cu. ft.		60.0 cu. ft.	
Interior Dimensions WxDxH inches (cm)	36 x 24 x 48 (91.4 x 61 x 121.9)		48 x 24 x 48 (121.9 x 61 x 121.9)		36 x 36 x 48 (91.4 x 91.4 x 121.9)		36 x 48 x 60 (91.4 x 121.9 x 152.4)	
Exterior Dimensions WxDxH inches (cm)	63 x 39 x 85 (160 x 99.1 x 215.9)		75 x 39 x 85 (190.5 x 99.1 x 215.9)		63 x 51 x 85 (160 x 129.5 x 215.9)		80 x 63 x 93 (203.2 x 160 x 236.2)	
Machine footprint	17.1 sq. ft.		20.3 sq. ft.		22.3 sq. ft.		35.0 sq. ft.	
Electrical Service	Std	Hi Power	Std	Hi Power	Std	Hi Power	Std	Hi Power
208 VAC 3Ph 50/60 Hz Line Current (per Ph)	11 kW 33	16 kW 48	14 kW 42	20 kW 61	11 kW 33	11 kW 33	11 kW 33	11 kW 33
240 VAC 3Ph 50/60 Hz Line current (per Ph)	14 kW 38	21 kW 54	18 kW 47	27 kW 70	18 kW 47	27 kW 70	24 kW 47	34.5 kW 96
480 VAC 3Ph 50/60 Hz Line current (per Ph)	14 kW 19	21 kW 28	18 kW 24	27 kW 35	18 kW 24	27 kW 35	36 kW 48	36 kW 48

All specifications are subject to change without notice.

▶ Standard Batch Oven Options

- Stainless or CRS steel slotted shelves
- High-temperature capability of 399°C (750°F)
- High power for fast heat-up, high exhaust or large loads
- Door switch
- Motorized intake damper
- Welded and sealed inner chamber
- 24-hour, 7-day program timer
- 10" circular chart recorder
- Reverse door hinge
- Back-up over-temperature protection

▶ Engineered Oven Options

- Additional lead-in ports
- Interior light
- Glass observation panel(s)
- Oversized one-pass air flow system
- Redundant over-temperature protection
- Rear access door(s)
- Comm-Link RS-485 to RS-232 converter
- All stainless steel construction
- Special control systems
- Five-drawer and five-door configurations for process flexibility

▶ Roll-In Rack Options

- Cold-rolled or stainless steel roll-in racks
- Roll-in rack shelves
- Special truck channel or flat uninsulated floor for customer designed racks
- Custom designed roll-in racks for product fixturing
- Pass-through "tunnel" design with front and rear doors



»» Blue M Ultra-Temp Standard High-Temperature Convection Ovens

Ultra-Temp® Standard

The Blue M Ultra-Temp® Standard High-Temperature Industrial Oven is ideal for annealing, heat treating, stress relieving, binder burn-out, ceramic firing and a number of other high-temperature processes.

▶ Ultra-Temp High-Temperature Industrial Oven Features

- Welded and sealed inner chamber eliminates fume migration into the insulation
- Heat shielded doors for low skin temperature
- 6" of mineral wool insulation to minimize heat loss
- Blue M tadpole door gasket design
- Blue M Pivot Lock door latch to seal gaskets at the highest operating temperatures
- Safety door switch shuts down heaters and blower when door opens

▶ Ultra-Temp High-Temperature Industrial Oven Options

- Stainless steel shelves
- 24-hour, 7-day digital timer
- Circular chart recorder
- Reverse door hinge
- Motorized exhaust damper
- Comm-Link RS-485 to RS-232 converter



Condensed Specifications					
Model	5580	6680	7780	8880	9980
Interior Volume	1.6 cu. ft.	4.2 cu. ft.	5.8 cu. ft.	11.0 cu. ft.	24.0 cu. ft.
Interior Dimensions WxDXH inches (mm)	14 x 14 x 14 (356 x 356 x 356)	20 x 18 x 20 (508 x 457 x 508)	25 x 20 x 20 (635 x 508 x 508)	38 x 20 x 25 (965 x 508 x 635)	48 x 24 x 36 (1219 x 610 x 914)
Exterior Dimensions WxDXH inches (mm)	44 x 32 x 61 (1118 x 813 x 1549)	52 x 36 x 67 (1320 x 914 x 1702)	55 x 38 x 67 (1397 x 965 x 1702)	77 x 39 x 72 (1956 x 991 x 1829)	91 x 45 x 77 (2311 x 1145 x 1955)
Machine Footprint	9.7 sq. ft.	12.5 sq. ft.	14.5 sq. ft.	24.0 sq. ft.	32.2 sq. ft.
Electrical Service					
208 VAC 3 Ph 50/60 Hz Line current (per ph)	9.0 kW 30	12.0 kW 38	15.7 kW 47	18.8 kW 59	22.5 kW 72
240 VAC 3 Ph 50/60 Hz Line current (per ph)	12.0 kW 34	16.0 kW 43	21.0 kW 54	25.0 kW 68	30.0 kW 82
480 VAC 3 Ph 50/60 Hz Line current (per ph)	N/A	16.0 kW 21	21.0 kW 27	25.0 kW 32	30.0 kW 41

All specifications are subject to change without notice.

► General High-Temperature Convection Ovens Specifications

- Temperature range: 15°C above ambient to 704°C (1300°F)
- Uniformity: +/- 2% of setpoint
- Control Accuracy: +/- 0.5°C
- Resolution: +/- 0.1°C

Empty chamber performance with exhaust closed and at rated voltage

► Ultra-Temp® Options

- Stainless steel shelves
- 24-hour, 7-day digital timer
- Circular chart recorder
- Reverse door hinge
- Motorized exhaust damper
- Comm-Link RS-485 to RS-232 converter

► Engineered Options

- Vycor® glass observation panel
- Redundant over-temperature protection
- Lead-in ports
- Special control systems



TPS
Thermal Product Solutions

»» Blue M Ultra-Temp Inert Gas High-Temperature Convection Ovens

Ultra-Temp® Inert Gas

The Blue M Ultra-Temp® Inert Gas High-Temperature Oven, pressure tested at operating temperatures, is suitable for all inert gases and non-flammable forming gases (maximum 4% hydrogen, balance nitrogen).

► Features

- Heavy-gauge steel exterior
- Exterior panels are at least 16 gauge
- All welded and sealed inner chamber construction
- 304 stainless steel
- Full 1/2-inch steel front chamber mounting plate
- Baked-on powder-coated enamel finish
- Heat shielded doors for low skin temperature
- Mineral wool insulation - 6 full inches
- Fiberglass tadpole door gasket
- Pivot-Lock™ door latch
- Dual-gasket door seal design maintains seal integrity at temperatures to 593°C (1099°F)
- Standard safety door switch

► Uniform, Accurate and Reliable Temperature Control

- Profiling or single setpoint temperature controls
- Horizontal air flow
- Inert gas controls
- Purge timer
- Chamber pressure gauge and pressure relief valve
- Adjustable flow meter and purge bypass valve
- Air-cooled chamber design
- Forced air cooling
- Gas delivery system
- High-temperature blower system



Condensed Specifications				
Model	6680	7780	8880	9980
Interior Volume	4.2 cu. ft.	5.8 cu. ft.	11.0 cu. ft.	24.0 cu. ft.
Interior Dimensions WxDXH in. (cm)	20 x 18 x 20 (50.8 x 45.72 x 50.8)	25 x 20 x 20 (63.5 x 50.8 x 50.8)	38 x 20 x 25 (96.52 x 50.8 x 63.5)	48 x 24 x 36 (121.92 x 60.96 x 91.44)
Exterior Dimensions WxDXH in. (cm)	52 x 36 x 67 (132.08 x 91.44 x 170.18)	51 x 38 x 71 (129.5 x 96.52 x 180.34)	77 x 39 x 72 (195.58 x 99.06 x 182.88)	91 x 45 x 77 (231.14 x 114.3 x 195.58)
Machine Footprint	12.5 sq. ft.	14.5 sq. ft.	24.0 sq. ft.	32.2 sq. ft.
Electrical Service				
208 VAC 3 Ph 50/60 Hz Line current (per ph)	12.0 kW 38	15.7 kW 47	18.8 kW 59	
240 VAC 3 Ph 50/60 Hz Line current (per ph)	16.0 kW 43	21.0 kW 54	25.0 kW 68	30.0 kW 82
480 VAC 3 Ph 50/60 Hz Line current (per ph)	16.0 kW 21	21.0 kW 27	25.0 kW 32	30.0 kW 41

All specifications are subject to change without notice.

▶ Ultra-Temp® Options

- Stainless steel shelves
- 24-hour, 7-day digital timer
- Circular chart recorder
- Reverse door hinge
- Motorized exhaust damper
- Comm-Link RS-485 to RS-232 converter

▶ Engineered Options

- Redundant over-temperature protection
- Lead-in ports
- Special control systems



TPS
Thermal Product Solutions



»» Gruenberg

Conveyor Ovens

Standard and Custom Conveyor Ovens

Gruenberg manufactures a complete line of standard and custom Industrial conveyor ovens and conveyor Industrial oven modules that incorporate various maximum temperatures in order to accommodate a variety of applications. If you have a unique process that requires a seemingly unavailable oven type, call Gruenberg. We specialize in designing and building industrial oven heat process solutions for individual applications.

The modular industrial conveyor oven concept of standard 6-foot lengths allows you to add units as your production increases or to create heating and cooling zones within your continuous process. These industrial conveyor ovens include state-of-the-art digital controllers, uniform air flow, convenient safety features, and rugged construction that will provide years of worry-free use.

Maximum temperatures include: 450°F, 650°F, 800°F, and 1000°F.

Gruenberg also offers an economy industrial conveyor oven module with a maximum temperature of 350°F.



THERMAL PRODUCT SOLUTIONS

»» Blue M »» Gruenberg »» Lindberg/MPH »» Tenney

450°F Maximum Temperature

Interior Width	Height Without Conveyor	Usable Height With Conveyor	Air flow	Interior Dimensions L x W x H inches (cm)	Exterior Dimensions L x W x H inches (cm)	Circulation CFM	Heater Wattage (kW)	Shipping Weight	Model Number
16" Accepts 12" Wide Conveyor Belt	16"	8"	Horizontal	65.5 x 16 x 16 (166.4 x 40.6 x 40.6)	72 x 30.5 x 46 (182.9 x 77.5 x 116.8)	800	12	400	MM45H106
	16"	8"	Vert. Up	65.5 x 16 x 16 (166.4 x 40.6 x 40.6)	72 x 30.5 x 46 (182.9 x 77.5 x 116.8)	800	12	400	MM45VU106
	16"	8"	Vert. Down	65.5 x 16 x 16 (166.4 x 40.6 x 40.6)	72 x 30.5 x 46 (182.9 x 77.5 x 116.8)	800	12	400	MM45VD106
	22"	14"	Horizontal	65.5 x 16 x 22 (166.4 x 40.6 x 55.9)	72 x 30.5 x 52 (182.9 x 77.5 x 132.1)	800	15	500	MM45H150
	22"	14"	Vert. Up	65.5 x 16 x 22 (166.4 x 40.6 x 55.9)	72 x 30.5 x 52 (182.9 x 77.5 x 132.1)	800	15	500	MM45VU150
	22"	14"	Vert. Down	65.5 x 16 x 22 (166.4 x 40.6 x 55.9)	72 x 30.5 x 52 (182.9 x 77.5 x 132.1)	800	15	500	MM45VD150
	28"	20"	Horizontal	65.5 x 16 x 28 (166.4 x 40.6 x 71.1)	72 x 30.5 x 58 (182.9 x 77.5 x 147.3)	800	27	650	MM45H185
	28"	20"	Vert. Up	65.5 x 16 x 28 (166.4 x 40.6 x 71.1)	72 x 30.5 x 58 (182.9 x 77.5 x 147.3)	800	27	650	MM45VU185
	28"	20"	Vert. Down	65.5 x 16 x 28 (166.4 x 40.6 x 71.1)	72 x 30.5 x 58 (182.9 x 77.5 x 147.3)	800	27	650	MM45VD185
22" Accepts 18" Wide Conveyor Belt	16"	8"	Horizontal	65.5 x 22 x 16 (166.4 x 55.9 x 40.6)	72 x 36.5 x 46 (182.9 x 92.7 x 116.8)	800	15	475	MM45H147
	16"	8"	Vert. Up	65.5 x 22 x 16 (166.4 x 55.9 x 40.6)	72 x 36.5 x 46 (182.9 x 92.7 x 116.8)	800	15	475	MM45VU147
	16"	8"	Vert. Down	65.5 x 22 x 16 (166.4 x 55.9 x 40.6)	72 x 36.5 x 46 (182.9 x 92.7 x 116.8)	800	15	475	MM45VD147
	22"	14"	Horizontal	65.5 x 22 x 22 (166.4 x 55.9 x 55.9)	72 x 36.5 x 52 (182.9 x 92.7 x 132.1)	800	24	575	MM45H210
	22"	14"	Vert. Up	65.5 x 22 x 22 (166.4 x 55.9 x 55.9)	72 x 36.5 x 52 (182.9 x 92.7 x 132.1)	800	24	575	MM45VU210
	22"	14"	Vert. Down	65.5 x 22 x 22 (166.4 x 55.9 x 55.9)	72 x 36.5 x 52 (182.9 x 92.7 x 132.1)	800	24	575	MM45VD210
	28"	20"	Horizontal	65.5 x 22 x 28 (166.4 x 55.9 x 71.1)	72 x 36.5 x 58 (182.9 x 92.7 x 147.3)	1200	27	725	MM45H255
	28"	20"	Vert. Up	65.5 x 22 x 28 (166.4 x 55.9 x 71.1)	72 x 36.5 x 58 (182.9 x 92.7 x 147.3)	1200	27	725	MM45VU255
	28"	20"	Vert. Down	65.5 x 22 x 28 (166.4 x 55.9 x 71.1)	72 x 36.5 x 58 (182.9 x 92.7 x 147.3)	1200	27	725	MM45VD255

► Air flow Options for Conveyor Ovens

- Vertical Up Air flow
- Vertical Down Air flow
- Horizontal Air flow

► Options for Conveyor Ovens

- Insulated Base Assemblies
- Conveyors - 12" to 30" wide

► Custom Conveyor Oven Designs

If you have a unique process that requires a seemingly unavailable oven type, call Gruenberg. We specialize in designing and building heat process solutions for individual applications.

► Industrial Conveyor Oven Options

- Insulated Base Assemblies
- Conveyors - 12" to 30" wide

► Industrial Conveyor Oven Air flow Options

- Vertical Up Air flow
- Vertical Down Air flow
- Horizontal Air flow

450°F Maximum Temperature cont.

Interior Width	Height Without Conveyor	Usable Height With Conveyor	Air flow	Interior Dimensions L x W x H inches (cm)	Exterior Dimensions L x W x H inches (cm)	Circulation CFM	Heater Wattage (kW)	Shipping Weight	Model Number
28" Accepts 24" Wide Conveyor Belt	16"	8"	Horizontal	65.5 x 28 x 16 (166.4 x 71.1 x 40.6)	72 x 42.5 x 46 (182.9 x 108 x 116.8)	800	18	550	MM45H187
	16"	8"	Vert. Up	65.5 x 28 x 16 (166.4 x 71.1 x 40.6)	72 x 42.5 x 46 (182.9 x 108 x 116.8)	800	18	550	MM45VU187
	16"	8"	Vert. Down	65.5 x 28 x 16 (166.4 x 71.1 x 40.6)	72 x 42.5 x 46 (182.9 x 108 x 116.8)	800	18	550	MM45VD187
	22"	14"	Horizontal	65.5 x 28 x 22 (166.4 x 71.1 x 55.9)	72 x 42.5 x 52 (182.9 x 108 x 132.1)	800	27	650	MM45H257
	22"	14"	Vert. Up	65.5 x 28 x 22 (166.4 x 71.1 x 55.9)	72 x 42.5 x 52 (182.9 x 108 x 132.1)	800	27	650	MM45VU257
	22"	14"	Vert. Down	65.5 x 28 x 22 (166.4 x 71.1 x 55.9)	72 x 42.5 x 52 (182.9 x 108 x 132.1)	800	27	650	MM45VD257
	28"	20"	Horizontal	65.5 x 28 x 28 (166.4 x 71.1 x 71.1)	72 x 42.5 x 58 (182.9 x 108 x 147.3)	1800	30	800	MM45H326
	28"	20"	Vert. Up	65.5 x 28 x 28 (166.4 x 71.1 x 71.1)	72 x 42.5 x 58 (182.9 x 108 x 147.3)	1800	30	800	MM45VU326
	28"	20"	Vert. Down	65.5 x 28 x 28 (166.4 x 71.1 x 71.1)	72 x 42.5 x 58 (182.9 x 108 x 147.3)	1800	30	800	MM45VD326
34" Accepts 30" Wide Conveyor Belt	16"	8"	Horizontal	65.5 x 34 x 16 (166.4 x 86.4 x 40.6)	72 x 48.5 x 46 (182.9 x 123.2 x 116.8)	1200	24	625	MM45H227
	16"	8"	Vert. Up	65.5 x 34 x 16 (166.4 x 86.4 x 40.6)	72 x 48.5 x 46 (182.9 x 123.2 x 116.8)	1200	24	625	MM45VU227
	16"	8"	Vert. Down	65.5 x 34 x 16 (166.4 x 86.4 x 40.6)	72 x 48.5 x 46 (182.9 x 123.2 x 116.8)	1200	24	625	MM45VD227
	22"	14"	Horizontal	65.5 x 34 x 22 (166.4 x 86.4 x 55.9)	72 x 48.5 x 52 (182.9 x 123.2 x 132.1)	1200	30	725	MM45H312
	22"	14"	Vert. Up	65.5 x 34 x 22 (166.4 x 86.4 x 55.9)	72 x 48.5 x 52 (182.9 x 123.2 x 132.1)	1200	30	725	MM45VU312
	22"	14"	Vert. Down	65.5 x 34 x 22 (166.4 x 86.4 x 55.9)	72 x 48.5 x 52 (182.9 x 123.2 x 132.1)	1200	30	725	MM45VD312
	28"	20"	Horizontal	65.5 x 34 x 28 (166.4 x 86.4 x 71.1)	72 x 48.5 x 58 (182.9 x 123.2 x 147.3)	2000	36	975	MM45H396
	28"	20"	Vert. Up	65.5 x 34 x 28 (166.4 x 86.4 x 71.1)	72 x 48.5 x 58 (182.9 x 123.2 x 147.3)	2000	36	975	MM45VU396
	28"	20"	Vert. Down	65.5 x 34 x 28 (166.4 x 86.4 x 71.1)	72 x 48.5 x 58 (182.9 x 123.2 x 147.3)	2000	36	975	MM45VD396

650°F Maximum Temperature

Interior Width	Height Without Conveyor	Usable Height With Conveyor	Air flow	Interior Dimensions L x W x H inches (cm)	Exterior Dimensions L x W x H inches (cm)	Circulation CFM	Heater Wattage (kW)	Shipping Weight	Model Number
16" Accepts 12" Wide Conveyor Belt	16"	8"	Horizontal	65.5 x 16 x 16 (166.4 x 40.6 x 40.6)	72 x 30.5 x 46 (182.9 x 77.5 x 116.8)	800	15	450	MM65H106
	16"	8"	Vert. Up	65.5 x 16 x 16 (166.4 x 40.6 x 40.6)	72 x 30.5 x 46 (182.9 x 77.5 x 116.8)	800	15	450	MM65VU106
	16"	8"	Vert. Down	65.5 x 16 x 16 (166.4 x 40.6 x 40.6)	72 x 30.5 x 46 (182.9 x 77.5 x 116.8)	800	15	450	MM65VD106
	22"	14"	Horizontal	65.5 x 16 x 22 (166.4 x 40.6 x 55.9)	72 x 30.5 x 52 (182.9 x 77.5 x 132.1)	800	18	550	MM65H150
	22"	14"	Vert. Up	65.5 x 16 x 22 (166.4 x 40.6 x 55.9)	72 x 30.5 x 52 (182.9 x 77.5 x 132.1)	800	18	550	MM65VU150
	22"	14"	Vert. Down	65.5 x 16 x 22 (166.4 x 40.6 x 55.9)	72 x 30.5 x 52 (182.9 x 77.5 x 132.1)	800	18	550	MM65VD150
	28"	20"	Horizontal	65.5 x 16 x 28 (166.4 x 40.6 x 71.1)	72 x 30.5 x 58 (182.9 x 77.5 x 147.3)	800	30	700	MM65H185
	28"	20"	Vert. Up	65.5 x 16 x 28 (166.4 x 40.6 x 71.1)	72 x 30.5 x 58 (182.9 x 77.5 x 147.3)	800	30	700	MM65VU185
	28"	20"	Vert. Down	65.5 x 16 x 28 (166.4 x 40.6 x 71.1)	72 x 30.5 x 58 (182.9 x 77.5 x 147.3)	800	30	700	MM65VD185
22" Accepts 18" Wide Conveyor Belt	16"	8"	Horizontal	65.5 x 22 x 16 (166.4 x 55.9 x 40.6)	72 x 36.5 x 46 (182.9 x 92.7 x 116.8)	800	18	525	MM65H147
	16"	8"	Vert. Up	65.5 x 22 x 16 (166.4 x 55.9 x 40.6)	72 x 36.5 x 46 (182.9 x 92.7 x 116.8)	800	18	525	MM65VU147
	16"	8"	Vert. Down	65.5 x 22 x 16 (166.4 x 55.9 x 40.6)	72 x 36.5 x 46 (182.9 x 92.7 x 116.8)	800	18	525	MM65VD147
	22"	14"	Horizontal	65.5 x 22 x 22 (166.4 x 55.9 x 55.9)	72 x 36.5 x 52 (182.9 x 92.7 x 132.1)	800	24	625	MM65H210
	22"	14"	Vert. Up	65.5 x 22 x 22 (166.4 x 55.9 x 55.9)	72 x 36.5 x 52 (182.9 x 92.7 x 132.1)	800	24	625	MM65VU210
	22"	14"	Vert. Down	65.5 x 22 x 22 (166.4 x 55.9 x 55.9)	72 x 36.5 x 52 (182.9 x 92.7 x 132.1)	800	24	625	MM65VD210
	28"	20"	Horizontal	65.5 x 22 x 28 (166.4 x 55.9 x 71.1)	72 x 36.5 x 58 (182.9 x 92.7 x 147.3)	1200	30	775	MM65H255
	28"	20"	Vert. Up	65.5 x 22 x 28 (166.4 x 55.9 x 71.1)	72 x 36.5 x 58 (182.9 x 92.7 x 147.3)	1200	30	775	MM65VU255
	28"	20"	Vert. Down	65.5 x 22 x 28 (166.4 x 55.9 x 71.1)	72 x 36.5 x 58 (182.9 x 92.7 x 147.3)	1200	30	775	MM65VD255

650°F Maximum Temperature cont.

Interior Width	Height Without Conveyor	Usable Height With Conveyor	Air flow	Interior Dimensions L x W x H inches (cm)	Exterior Dimensions L x W x H inches (cm)	Circulation CFM	Heater Wattage (kW)	Shipping Weight	Model Number
28" Accepts 24" Wide Conveyor Belt	16"	8"	Horizontal	65.5 x 28 x 16 (166.4 x 71.1 x 40.6)	72 x 42.5 x 46 (182.9 x 108 x 116.8)	800	24	600	MM65H187
	16"	8"	Vert. Up	65.5 x 28 x 16 (166.4 x 71.1 x 40.6)	72 x 42.5 x 46 (182.9 x 108 x 116.8)	800	24	600	MM65VU187
	16"	8"	Vert. Down	65.5 x 28 x 16 (166.4 x 71.1 x 40.6)	72 x 42.5 x 46 (182.9 x 108 x 116.8)	800	24	600	MM65VD187
	22"	14"	Horizontal	65.5 x 28 x 22 (166.4 x 71.1 x 55.9)	72 x 42.5 x 52 (182.9 x 108 x 132.1)	800	30	700	MM65H257
	22"	14"	Vert. Up	65.5 x 28 x 22 (166.4 x 71.1 x 55.9)	72 x 42.5 x 52 (182.9 x 108 x 132.1)	800	30	700	MM65VU257
	22"	14"	Vert. Down	65.5 x 28 x 22 (166.4 x 71.1 x 55.9)	72 x 42.5 x 52 (182.9 x 108 x 132.1)	800	30	700	MM65VD257
	28"	20"	Horizontal	65.5 x 28 x 28 (166.4 x 71.1 x 71.1)	72 x 42.5 x 58 (182.9 x 108 x 147.3)	1800	36	850	MM65H326
	28"	20"	Vert. Up	65.5 x 28 x 28 (166.4 x 71.1 x 71.1)	72 x 42.5 x 58 (182.9 x 108 x 147.3)	1800	36	850	MM65VU326
	28"	20"	Vert. Down	65.5 x 28 x 28 (166.4 x 71.1 x 71.1)	72 x 42.5 x 58 (182.9 x 108 x 147.3)	1800	36	850	MM65VD326
34" Accepts 30" Wide Conveyor Belt	16"	8"	Horizontal	65.5 x 34 x 16 (166.4 x 86.4 x 40.6)	72 x 48.5 x 46 (182.9 x 123.2 x 116.8)	1200	24	675	MM65H227
	16"	8"	Vert. Up	65.5 x 34 x 16 (166.4 x 86.4 x 40.6)	72 x 48.5 x 46 (182.9 x 123.2 x 116.8)	1200	24	675	MM65VU227
	16"	8"	Vert. Down	65.5 x 34 x 16 (166.4 x 86.4 x 40.6)	72 x 48.5 x 46 (182.9 x 123.2 x 116.8)	1200	24	675	MM65VD227
	22"	14"	Horizontal	65.5 x 34 x 22 (166.4 x 86.4 x 55.9)	72 x 48.5 x 52 (182.9 x 123.2 x 132.1)	1200	36	775	MM65H312
	22"	14"	Vert. Up	65.5 x 34 x 22 (166.4 x 86.4 x 55.9)	72 x 48.5 x 52 (182.9 x 123.2 x 132.1)	1200	36	775	MM65VU312
	22"	14"	Vert. Down	65.5 x 34 x 22 (166.4 x 86.4 x 55.9)	72 x 48.5 x 52 (182.9 x 123.2 x 132.1)	1200	36	775	MM65VD312
	28"	20"	Horizontal	65.5 x 34 x 28 (166.4 x 86.4 x 71.1)	72 x 48.5 x 58 (182.9 x 123.2 x 147.3)	2000	45	1025	MM65H396
	28"	20"	Vert. Up	65.5 x 34 x 28 (166.4 x 86.4 x 71.1)	72 x 48.5 x 58 (182.9 x 123.2 x 147.3)	2000	45	1025	MM65VU396
	28"	20"	Vert. Down	65.5 x 34 x 28 (166.4 x 86.4 x 71.1)	72 x 48.5 x 58 (182.9 x 123.2 x 147.3)	2000	45	1025	MM65VD396

800°F Maximum Temperature

Interior Width	Height Without Conveyor	Usable Height With Conveyor	Air flow	Interior Dimensions L x W x H inches (cm)	Exterior Dimensions L x W x H inches (cm)	Circulation CFM	Heater Wattage (kW)	Shipping Weight	Model Number
16" Accepts 12" Wide Conveyor Belt	16"	8"	Horizontal	65.5 x 16 x 16 (166.4 x 40.6 x 40.6)	72 x 30.5 x 46 (182.9 x 77.5 x 116.8)	1200	18	500	MM80H106
	16"	8"	Vert. Up	65.5 x 16 x 16 (166.4 x 40.6 x 40.6)	72 x 30.5 x 46 (182.9 x 77.5 x 116.8)	1200	18	500	MM80VU106
	16"	8"	Vert. Down	65.5 x 16 x 16 (166.4 x 40.6 x 40.6)	72 x 30.5 x 46 (182.9 x 77.5 x 116.8)	1200	18	500	MM80VD106
	22"	14"	Horizontal	65.5 x 16 x 22 (166.4 x 40.6 x 55.9)	72 x 30.5 x 52 (182.9 x 77.5 x 132.1)	1200	24	600	MM80H150
	22"	14"	Vert. Up	65.5 x 16 x 22 (166.4 x 40.6 x 55.9)	72 x 30.5 x 52 (182.9 x 77.5 x 132.1)	1200	24	600	MM80VU150
	22"	14"	Vert. Down	65.5 x 16 x 22 (166.4 x 40.6 x 55.9)	72 x 30.5 x 52 (182.9 x 77.5 x 132.1)	1200	24	600	MM80VD150
	28"	20"	Horizontal	65.5 x 16 x 28 (166.4 x 40.6 x 71.1)	72 x 30.5 x 58 (182.9 x 77.5 x 147.3)	1200	36	750	MM80H185
	28"	20"	Vert. Up	65.5 x 16 x 28 (166.4 x 40.6 x 71.1)	72 x 30.5 x 58 (182.9 x 77.5 x 147.3)	1200	36	750	MM80VU185
	28"	20"	Vert. Down	65.5 x 16 x 28 (166.4 x 40.6 x 71.1)	72 x 30.5 x 58 (182.9 x 77.5 x 147.3)	1200	36	750	MM80VD185
22" Accepts 18" Wide Conveyor Belt	16"	8"	Horizontal	65.5 x 22 x 16 (166.4 x 55.9 x 40.6)	72 x 36.5 x 46 (182.9 x 92.7 x 116.8)	1200	24	575	MM80H147
	16"	8"	Vert. Up	65.5 x 22 x 16 (166.4 x 55.9 x 40.6)	72 x 36.5 x 46 (182.9 x 92.7 x 116.8)	1200	24	575	MM80VU147
	16"	8"	Vert. Down	65.5 x 22 x 16 (166.4 x 55.9 x 40.6)	72 x 36.5 x 46 (182.9 x 92.7 x 116.8)	1200	24	575	MM80VD147
	22"	14"	Horizontal	65.5 x 22 x 22 (166.4 x 55.9 x 55.9)	72 x 36.5 x 52 (182.9 x 92.7 x 132.1)	1200	27	675	MM80H210
	22"	14"	Vert. Up	65.5 x 22 x 22 (166.4 x 55.9 x 55.9)	72 x 36.5 x 52 (182.9 x 92.7 x 132.1)	1200	27	675	MM80VU210
	22"	14"	Vert. Down	65.5 x 22 x 22 (166.4 x 55.9 x 55.9)	72 x 36.5 x 52 (182.9 x 92.7 x 132.1)	1200	27	675	MM80VD210
	28"	20"	Horizontal	65.5 x 22 x 28 (166.4 x 55.9 x 71.1)	72 x 36.5 x 58 (182.9 x 92.7 x 147.3)	1600	36	825	MM80H255
	28"	20"	Vert. Up	65.5 x 22 x 28 (166.4 x 55.9 x 71.1)	72 x 36.5 x 58 (182.9 x 92.7 x 147.3)	1600	36	825	MM80VU255
	28"	20"	Vert. Down	65.5 x 22 x 28 (166.4 x 55.9 x 71.1)	72 x 36.5 x 58 (182.9 x 92.7 x 147.3)	1600	36	825	MM80VD255

800°F Maximum Temperature cont.

Interior Width	Height Without Conveyor	Usable Height With Conveyor	Air flow	Interior Dimensions L x W x H inches (cm)	Exterior Dimensions L x W x H inches (cm)	Circulation CFM	Heater Wattage (kW)	Shipping Weight	Model Number
28" Accepts 24" Wide Conveyor Belt	16"	8"	Horizontal	65.5 x 28 x 16 (166.4 x 71.1 x 40.6)	72 x 42.5 x 46 (182.9 x 108 x 116.8)	1200	24	650	MM80H187
	16"	8"	Vert. Up	65.5 x 28 x 16 (166.4 x 71.1 x 40.6)	72 x 42.5 x 46 (182.9 x 108 x 116.8)	1200	24	650	MM80VU187
	16"	8"	Vert. Down	65.5 x 28 x 16 (166.4 x 71.1 x 40.6)	72 x 42.5 x 46 (182.9 x 108 x 116.8)	1200	24	650	MM80VD187
	22"	14"	Horizontal	65.5 x 28 x 22 (166.4 x 71.1 x 55.9)	72 x 42.5 x 52 (182.9 x 108 x 132.1)	1200	36	750	MM80H257
	22"	14"	Vert. Up	65.5 x 28 x 22 (166.4 x 71.1 x 55.9)	72 x 42.5 x 52 (182.9 x 108 x 132.1)	1200	36	750	MM80VU257
	22"	14"	Vert. Down	65.5 x 28 x 22 (166.4 x 71.1 x 55.9)	72 x 42.5 x 52 (182.9 x 108 x 132.1)	1200	36	750	MM80VD257
	28"	20"	Horizontal	65.5 x 28 x 28 (166.4 x 71.1 x 71.1)	72 x 42.5 x 58 (182.9 x 108 x 147.3)	2400	36	900	MM80H326
	28"	20"	Vert. Up	65.5 x 28 x 28 (166.4 x 71.1 x 71.1)	72 x 42.5 x 58 (182.9 x 108 x 147.3)	2400	36	900	MM80VU326
	28"	20"	Vert. Down	65.5 x 28 x 28 (166.4 x 71.1 x 71.1)	72 x 42.5 x 58 (182.9 x 108 x 147.3)	2400	36	900	MM80VD326
34" Accepts 30" Wide Conveyor Belt	16"	8"	Horizontal	65.5 x 34 x 16 (166.4 x 86.4 x 40.6)	72 x 48.5 x 46 (182.9 x 123.2 x 116.8)	1600	27	725	MM80H227
	16"	8"	Vert. Up	65.5 x 34 x 16 (166.4 x 86.4 x 40.6)	72 x 48.5 x 46 (182.9 x 123.2 x 116.8)	1600	27	725	MM80VU227
	16"	8"	Vert. Down	65.5 x 34 x 16 (166.4 x 86.4 x 40.6)	72 x 48.5 x 46 (182.9 x 123.2 x 116.8)	1600	27	725	MM80VD227
	22"	14"	Horizontal	65.5 x 34 x 22 (166.4 x 86.4 x 55.9)	72 x 48.5 x 52 (182.9 x 123.2 x 132.1)	1600	36	825	MM80H312
	22"	14"	Vert. Up	65.5 x 34 x 22 (166.4 x 86.4 x 55.9)	72 x 48.5 x 52 (182.9 x 123.2 x 132.1)	1600	36	825	MM80VU312
	22"	14"	Vert. Down	65.5 x 34 x 22 (166.4 x 86.4 x 55.9)	72 x 48.5 x 52 (182.9 x 123.2 x 132.1)	1600	36	825	MM80VD312
	28"	20"	Horizontal	65.5 x 34 x 28 (166.4 x 86.4 x 71.1)	72 x 48.5 x 58 (182.9 x 123.2 x 147.3)	2600	45	1075	MM80H396
	28"	20"	Vert. Up	65.5 x 34 x 28 (166.4 x 86.4 x 71.1)	72 x 48.5 x 58 (182.9 x 123.2 x 147.3)	2600	45	1075	MM80VU396
	28"	20"	Vert. Down	65.5 x 34 x 28 (166.4 x 86.4 x 71.1)	72 x 48.5 x 58 (182.9 x 123.2 x 147.3)	2600	45	1075	MM80VD396

1000°F Maximum Temperature

Interior Width	Height Without Conveyor	Usable Height With Conveyor	Air flow	Interior Dimensions L x W x H inches (cm)	Exterior Dimensions L x W x H inches (cm)	Circulation CFM	Heater Wattage (kW)	Shipping Weight	Model Number
16" Accepts 12" Wide Conveyor Belt	16"	8"	Horizontal	65.5 x 16 x 16 (166.4 x 40.6 x 40.6)	72 x 32.5 x 47 (182.9 x 82.6 x 119.4)	1600	24	575	MM100H106
	16"	8"	Vert. Up	65.5 x 16 x 16 (166.4 x 40.6 x 40.6)	72 x 32.5 x 47 (182.9 x 82.6 x 119.4)	1600	24	575	MM100VU106
	16"	8"	Vert. Down	65.5 x 16 x 16 (166.4 x 40.6 x 40.6)	72 x 32.5 x 47 (182.9 x 82.6 x 119.4)	1600	24	575	MM100VD106
	22"	14"	Horizontal	65.5 x 16 x 22 (166.4 x 40.6 x 55.9)	72 x 32.5 x 53 (182.9 x 82.6 x 134.6)	1600	24	675	MM100H150
	22"	14"	Vert. Up	65.5 x 16 x 22 (166.4 x 40.6 x 55.9)	72 x 32.5 x 53 (182.9 x 82.6 x 134.6)	1600	24	675	MM100VU150
	22"	14"	Vert. Down	65.5 x 16 x 22 (166.4 x 40.6 x 55.9)	72 x 32.5 x 53 (182.9 x 82.6 x 134.6)	1600	24	675	MM100VD150
	28"	20"	Horizontal	65.5 x 16 x 28 (166.4 x 40.6 x 71.1)	72 x 32.5 x 59 (182.9 x 82.6 x 149.9)	1600	36	825	MM100H185
	28"	20"	Vert. Up	65.5 x 16 x 28 (166.4 x 40.6 x 71.1)	72 x 32.5 x 59 (182.9 x 82.6 x 149.9)	1600	36	825	MM100VU185
	28"	20"	Vert. Down	65.5 x 16 x 28 (166.4 x 40.6 x 71.1)	72 x 32.5 x 59 (182.9 x 82.6 x 149.9)	1600	36	825	MM100VD185
22" Accepts 18" Wide Conveyor Belt	16"	8"	Horizontal	65.5 x 22 x 16 (166.4 x 55.9 x 40.6)	72 x 38.5 x 47 (182.9 x 97.8 x 119.4)	1600	24	650	MM100H147
	16"	8"	Vert. Up	65.5 x 22 x 16 (166.4 x 55.9 x 40.6)	72 x 38.5 x 47 (182.9 x 97.8 x 119.4)	1600	24	650	MM100VU147
	16"	8"	Vert. Down	65.5 x 22 x 16 (166.4 x 55.9 x 40.6)	72 x 38.5 x 47 (182.9 x 97.8 x 119.4)	1600	24	650	MM100VD147
	22"	14"	Horizontal	65.5 x 22 x 22 (166.4 x 55.9 x 55.9)	72 x 38.5 x 53 (182.9 x 97.8 x 134.6)	1600	30	750	MM100H210
	22"	14"	Vert. Up	65.5 x 22 x 22 (166.4 x 55.9 x 55.9)	72 x 38.5 x 53 (182.9 x 97.8 x 134.6)	1600	30	750	MM100VU210
	22"	14"	Vert. Down	65.5 x 22 x 22 (166.4 x 55.9 x 55.9)	72 x 38.5 x 53 (182.9 x 97.8 x 134.6)	1600	30	750	MM100VD210
	28"	20"	Horizontal	65.5 x 22 x 28 (166.4 x 55.9 x 71.1)	72 x 38.5 x 59 (182.9 x 97.8 x 149.9)	2000	36	900	MM100H255
	28"	20"	Vert. Up	65.5 x 22 x 28 (166.4 x 55.9 x 71.1)	72 x 38.5 x 59 (182.9 x 97.8 x 149.9)	2000	36	900	MM100VU255
	28"	20"	Vert. Down	65.5 x 22 x 28 (166.4 x 55.9 x 71.1)	72 x 38.5 x 59 (182.9 x 97.8 x 149.9)	2000	36	900	MM100VD255

1000°F Maximum Temperature cont.

Interior Width	Height Without Conveyor	Usable Height With Conveyor	Air flow	Interior Dimensions L x W x H inches (cm)	Exterior Dimensions L x W x H inches (cm)	Circulation CFM	Heater Wattage (kW)	Shipping Weight	Model Number
28" Accepts 24" Wide Conveyor Belt	16"	8"	Horizontal	65.5 x 28 x 16 (166.4 x 71.1 x 40.6)	72 x 44.5 x 47 (182.9 x 113 x 119.4)	1600	27	675	MM100H187
	16"	8"	Vert. Up	65.5 x 28 x 16 (166.4 x 71.1 x 40.6)	72 x 44.5 x 47 (182.9 x 113 x 119.4)	1600	27	675	MM100VU187
	16"	8"	Vert. Down	65.5 x 28 x 16 (166.4 x 71.1 x 40.6)	72 x 44.5 x 47 (182.9 x 113 x 119.4)	1600	27	675	MM100VD187
	22"	14"	Horizontal	65.5 x 28 x 22 (166.4 x 71.1 x 55.9)	72 x 44.5 x 53 (182.9 x 113 x 134.6)	1600	36	825	MM100H257
	22"	14"	Vert. Up	65.5 x 28 x 22 (166.4 x 71.1 x 55.9)	72 x 44.5 x 53 (182.9 x 113 x 134.6)	1600	36	825	MM100VU257
	22"	14"	Vert. Down	65.5 x 28 x 22 (166.4 x 71.1 x 55.9)	72 x 44.5 x 53 (182.9 x 113 x 134.6)	1600	36	825	MM100VD257
	28"	20"	Horizontal	65.5 x 28 x 28 (166.4 x 71.1 x 71.1)	72 x 44.5 x 59 (182.9 x 113 x 149.9)	2800	45	975	MM100H326
	28"	20"	Vert. Up	65.5 x 28 x 28 (166.4 x 71.1 x 71.1)	72 x 44.5 x 59 (182.9 x 113 x 149.9)	2800	45	975	MM100VU326
	28"	20"	Vert. Down	65.5 x 28 x 28 (166.4 x 71.1 x 71.1)	72 x 44.5 x 59 (182.9 x 113 x 149.9)	2800	45	975	MM100VD326
34" Accepts 30" Wide Conveyor Belt	16"	8"	Horizontal	65.5 x 34 x 16 (166.4 x 86.4 x 40.6)	72 x 50.5 x 47 (182.9 x 128.3 x 119.4)	2000	30	800	MM100H227
	16"	8"	Vert. Up	65.5 x 34 x 16 (166.4 x 86.4 x 40.6)	72 x 50.5 x 47 (182.9 x 128.3 x 119.4)	2000	30	800	MM100VU227
	16"	8"	Vert. Down	65.5 x 34 x 16 (166.4 x 86.4 x 40.6)	72 x 50.5 x 47 (182.9 x 128.3 x 119.4)	2000	30	800	MM100VD227
	22"	14"	Horizontal	65.5 x 34 x 22 (166.4 x 86.4 x 55.9)	72 x 50.5 x 53 (182.9 x 128.3 x 134.6)	2000	45	900	MM100H312
	22"	14"	Vert. Up	65.5 x 34 x 22 (166.4 x 86.4 x 55.9)	72 x 50.5 x 53 (182.9 x 128.3 x 134.6)	2000	45	900	MM100VU312
	22"	14"	Vert. Down	65.5 x 34 x 22 (166.4 x 86.4 x 55.9)	72 x 50.5 x 53 (182.9 x 128.3 x 134.6)	2000	45	900	MM100VD312
	28"	20"	Horizontal	65.5 x 34 x 28 (166.4 x 86.4 x 71.1)	72 x 50.5 x 59 (182.9 x 128.3 x 149.9)	3000	45	1150	MM100H396
	28"	20"	Vert. Up	65.5 x 34 x 28 (166.4 x 86.4 x 71.1)	72 x 50.5 x 59 (182.9 x 128.3 x 149.9)	3000	45	1150	MM100VU396
	28"	20"	Vert. Down	65.5 x 34 x 28 (166.4 x 86.4 x 71.1)	72 x 50.5 x 59 (182.9 x 128.3 x 149.9)	3000	45	1150	MM100VD396

Economy Conveyor Ovens - Dimensions and Specifications

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions L x W x H inches (cm)	Exterior Dimensions L x W x H inches (cm)	Circulation CFM	Heater Wattage (kW)	Insulation Thickness (Inches)	Shipping Weight	Model Number
20.1	350°F	Horizontal	72 x 22 x 11.55 (182.9 x 55.9 x 29.3)	77 x 34 x 52 (195.6 x 86.4 x 132.1)	1200	15	2 low	500	ML35H20.1
20.1	350°F	Vert. Down	72 x 22 x 11.55 (182.9 x 55.9 x 29.3)	77 x 52 x 34 (195.6 x 132.1 x 86.4)	1200	15	2 low	500	ML35V20.1

Economy Conveyor Ovens - Conveyors for Economy Ovens

Model Number	Belt Width	Overall Dimensions W" x H" x L" inches (cm)	Load Capacity per Sq. Ft.	Drive Motor Torque	Speed Range Standard	Standard Electrical	Shipping Weight
GCL12D	12"	13.5 x 7 x 111 (34.3 x 17.8 x 281.9)	15 lbs.	250 in. lbs.	2" to 24"/min.	90VDC	250
GCL18D	18"	19.5 x 7 x 111 (49.5 x 17.8 x 281.9)	15 lbs.	250 in. lbs.	2" to 24"/min.	90VDC	300

Insulated Base Assemblies

Model	Width	Length	Adjustable Height	Fits Oven Module Exterior Width of
MM1B	30"	72"	21" to 25"	30.5"
MM2B	36"	72"	21" to 25"	36.5"
MM3B	42"	72"	21" to 25"	48.5"
MM4B	48"	72"	21" to 25"	48.5"

Conveyors

Belt Width	10-Foot Length	5-Foot Extensions	10-Foot Extensions
12"	GC12D	GC12E5	GC12E10
18"	GC18D	GC18E5	GC18E10
24"	GC24D	GC24E5	GC24E10
30"	GC30D	GC30E5	GC30E10

All specifications are subject to change without notice.



»» Gruenberg

Cabinet Ovens

Cabinet Ovens

Gruenberg designs and manufactures a complete line of standard and custom industrial cabinet ovens to accommodate a variety of thermal processing applications up to 1200°F, which are ideally suited for annealing, aging, core hardening, drying, preheating, curing, and component testing.

With additional options, they can also be used for applications such as epoxy, plastic, and rubber curing; paint and varnish baking; textile drying; and sterilizing.

► Gruenberg Industrial Oven Features

- Heavy-duty, fully welded structural steel frame
- CHIL construction ensures minimal heat transfer from oven chamber to the exterior
- Removable side and back walls for easy clean-up and maintenance
- Lid is constructed using a structural steel frame to ensure sealing integrity
- Insulation is moisture-proof, non-combustible, non-settling, and asbestos-free
- Energy-efficient, Incoloy® sheathed, seamless tubular heaters
- Heating elements are suspended in the plenum, which is adjacent to the process chamber so there is no radiant influence on the work in process



Temperatures to 450°F

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W x D x H inches (cm)	Exterior Dimensions W x D x H inches (cm)	Circulation CFM	Heater Wattage (kW)	Insulation Thickness (Inches)	Shipping Weight	Model Number
12	450°F	Horizontal	24 x 24 x 36 (61 x 61 x 91.4)	54 x 38 x 81 (137.2 x 96.5 x 205.7)	600	9	4-low	1000	C45H120
12	450°F	Vertical	24 x 24 x 36 (61 x 61 x 91.4)	54 x 38 x 81 (137.2 x 96.5 x 205.7)	600	9	4-low	1000	C45V120
24	450°F	Horizontal	24 x 36 x 48 (61 x 91.4 x 121.9)	54 x 50 x 93 (137.2 x 127 x 236.2)	1200	12	4-low	1200	C45H240
24	450°F	Vertical	24 x 36 x 48 (61 x 91.4 x 121.9)	54 x 50 x 93 (137.2 x 127 x 236.2)	1200	12	4-low	1200	C45V240
31	450°F	Horizontal	30 x 30 x 60 (76.2 x 76.2 x 152.4)	60 x 44 x 105 (152.4 x 111.8 x 266.7)	1550	15	4-low	1350	C45H310
31	450°F	Vertical	30 x 30 x 60 (76.2 x 76.2 x 152.4)	60 x 44 x 105 (152.4 x 111.8 x 266.7)	1550	15	4-low	1350	C45V310
36	450°F	Horizontal	36 x 36 x 48 (91.4 x 91.4 x 121.9)	66 x 50 x 93 (167.6 x 127 x 236.2)	1800	18	4-low	1550	C45H360
36	450°F	Vertical	36 x 36 x 48 (91.4 x 91.4 x 121.9)	66 x 50 x 93 (167.6 x 127 x 236.2)	1800	18	4-low	1550	C45V360
45	450°F	Horizontal	36 x 36 x 60 (91.4 x 91.4 x 152.4)	66 x 50 x 105 (167.6 x 127 x 266.7)	2250	22.5	4-low	1900	C45H450
45	450°F	Vertical	36 x 36 x 60 (91.4 x 91.4 x 152.4)	66 x 50 x 105 (167.6 x 127 x 266.7)	2250	22.5	4-low	1900	C45V450
54	450°F	Horizontal	36 x 36 x 72 (91.4 x 91.4 x 182.9)	66 x 50 x 118 (167.6 x 127 x 299.7)	2700	24	4-low	2200	C45H540
54	450°F	Vertical	36 x 36 x 72 (91.4 x 91.4 x 182.9)	66 x 50 x 118 (167.6 x 127 x 299.7)	2700	24	4-low	2200	C45V540
72	450°F	Horizontal	36 x 48 x 72 (91.4 x 121.9 x 182.9)	66 x 62 x 118 (167.6 x 157.5 x 299.7)	3600	27	4-low	2700	C45H720
72	450°F	Vertical	36 x 48 x 72 (91.4 x 121.9 x 182.9)	66 x 62 x 118 (167.6 x 157.5 x 299.7)	3600	27	4-low	2700	C45V720
96	450°F	Horizontal	48 x 48 x 72 (121.9 x 121.9 x 182.9)	78 x 62 x 120 (198.1 x 157.5 x 304.8)	4800	30	4-low	3000	C45H960
96	450°F	Vertical	48 x 48 x 72 (121.9 x 121.9 x 182.9)	78 x 62 x 120 (198.1 x 157.5 x 304.8)	4800	30	4-low	3000	C45V960

Temperatures to 650°F

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W x D x H inches (cm)	Exterior Dimensions W x D x H inches (cm)	Circulation CFM	Heater Wattage (kW)	Insulation Thickness (Inches)	Shipping Weight	Model Number
12	650°F	Horizontal	24 x 24 x 36 (61 x 61 x 91.4)	54 x 38 x 81 (137.2 x 96.5 x 205.7)	900	12	4-low	1100	C65H120
12	650°F	Vertical	24 x 24 x 36 (61 x 61 x 91.4)	54 x 38 x 81 (137.2 x 96.5 x 205.7)	900	12	4-low	1100	C65V120
24	650°F	Horizontal	24 x 36 x 48 (61 x 91.4 x 121.9)	54 x 50 x 93 (137.2 x 127 x 236.2)	1500	18	4-low	1300	C65H240
24	650°F	Vertical	24 x 36 x 48 (61 x 91.4 x 121.9)	54 x 50 x 93 (137.2 x 127 x 236.2)	1500	18	4-low	1300	C65V240
31	650°F	Horizontal	30 x 30 x 60 (76.2 x 76.2 x 152.4)	60 x 44 x 105 (152.4 x 111.8 x 266.7)	1800	22.5	4-low	1450	C65H310
31	650°F	Vertical	30 x 30 x 60 (76.2 x 76.2 x 152.4)	60 x 44 x 105 (152.4 x 111.8 x 266.7)	1800	22.5	4-low	1450	C65V310
36	650°F	Horizontal	36 x 36 x 48 (91.4 x 91.4 x 121.9)	66 x 50 x 93 (167.6 x 127 x 236.2)	2400	24	4-low	1650	C65H360
36	650°F	Vertical	36 x 36 x 48 (91.4 x 91.4 x 121.9)	66 x 50 x 93 (167.6 x 127 x 236.2)	2400	24	4-low	1650	C65V360
45	650°F	Horizontal	36 x 36 x 60 (91.4 x 91.4 x 152.4)	66 x 50 x 105 (167.6 x 127 x 266.7)	3000	27	4-low	2000	C65H450
45	650°F	Vertical	36 x 36 x 60 (91.4 x 91.4 x 152.4)	66 x 50 x 105 (167.6 x 127 x 266.7)	3000	27	4-low	2000	C65V450
54	650°F	Horizontal	36 x 36 x 72 (91.4 x 91.4 x 182.9)	66 x 50 x 118 (167.6 x 127 x 299.7)	3250	30	4-low	2300	C65H540
54	650°F	Vertical	36 x 36 x 72 (91.4 x 91.4 x 182.9)	66 x 50 x 118 (167.6 x 127 x 299.7)	3250	30	4-low	2300	C65V540
72	650°F	Horizontal	36 x 48 x 72 (91.4 x 121.9 x 182.9)	66 x 62 x 118 (167.6 x 157.5 x 299.7)	4200	36	4-low	2800	C65H720
72	650°F	Vertical	36 x 48 x 72 (91.4 x 121.9 x 182.9)	66 x 62 x 118 (167.6 x 157.5 x 299.7)	4200	36	4-low	2800	C65V720
96	650°F	Horizontal	48 x 48 x 72 (121.9 x 121.9 x 182.9)	78 x 62 x 120 (198.1 x 157.5 x 304.8)	5500	36	4-low	3100	C65H960
96	650°F	Vertical	48 x 48 x 72 (121.9 x 121.9 x 182.9)	78 x 62 x 120 (198.1 x 157.5 x 304.8)	5500	36	4-low	3100	C65V960

Temperatures to 800°F

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W x D x H inches (cm)	Exterior Dimensions W x D x H inches (cm)	Circulation CFM	Heater Wattage (kW)	Insulation Thickness (Inches)	Shipping Weight	Model Number
12	800°F	Horizontal	24 x 24 x 36 (61 x 61 x 91.4)	54 x 38 x 81 (137.2 x 96.5 x 205.7)	1000	15	3-low, 1-high	1250	C80H120
12	800°F	Vertical	24 x 24 x 36 (61 x 61 x 91.4)	54 x 38 x 81 (137.2 x 96.5 x 205.7)	1000	15	3-low, 1-high	1250	C80V120
24	800°F	Horizontal	24 x 36 x 48 (61 x 91.4 x 121.9)	54 x 50 x 93 (137.2 x 127 x 236.2)	1600	22.5	3-low, 1-high	1450	C80H240
24	800°F	Vertical	24 x 36 x 48 (61 x 91.4 x 121.9)	54 x 50 x 93 (137.2 x 127 x 236.2)	1600	22.5	3-low, 1-high	1450	C80V240
31	800°F	Horizontal	30 x 30 x 60 (76.2 x 76.2 x 152.4)	60 x 44 x 105 (152.4 x 111.8 x 266.7)	2100	24	3-low, 1-high	1650	C80H310
31	800°F	Vertical	30 x 30 x 60 (76.2 x 76.2 x 152.4)	60 x 44 x 105 (152.4 x 111.8 x 266.7)	2100	24	3-low, 1-high	1650	C80V310
36	800°F	Horizontal	36 x 36 x 48 (91.4 x 91.4 x 121.9)	66 x 50 x 93 (167.6 x 127 x 236.2)	2500	27	3-low, 1-high	1800	C80H360
36	800°F	Vertical	36 x 36 x 48 (91.4 x 91.4 x 121.9)	66 x 50 x 93 (167.6 x 127 x 236.2)	2500	27	3-low, 1-high	1800	C80V360
45	800°F	Horizontal	36 x 36 x 60 (91.4 x 91.4 x 152.4)	66 x 50 x 105 (167.6 x 127 x 266.7)	3100	30	3-low, 1-high	2150	C80H450
45	800°F	Vertical	36 x 36 x 60 (91.4 x 91.4 x 152.4)	66 x 50 x 105 (167.6 x 127 x 266.7)	3100	30	3-low, 1-high	2150	C80V450
54	800°F	Horizontal	36 x 36 x 72 (91.4 x 91.4 x 182.9)	66 x 50 x 118 (167.6 x 127 x 299.7)	3400	36	3-low, 1-high	2450	C80H540
54	800°F	Vertical	36 x 36 x 72 (91.4 x 91.4 x 182.9)	66 x 50 x 118 (167.6 x 127 x 299.7)	3400	36	3-low, 1-high	2450	C80V540
72	800°F	Horizontal	36 x 48 x 72 (91.4 x 121.9 x 182.9)	66 x 62 x 118 (167.6 x 157.5 x 299.7)	4300	36	3-low, 1-high	2950	C80H720
72	800°F	Vertical	36 x 48 x 72 (91.4 x 121.9 x 182.9)	66 x 62 x 118 (167.6 x 157.5 x 299.7)	4300	36	3-low, 1-high	2950	C80V720
96	800°F	Horizontal	48 x 48 x 72 (121.9 x 121.9 x 182.9)	78 x 62 x 120 (198.1 x 157.5 x 304.8)	5600	45	3-low, 1-high	3250	C80H960
96	800°F	Vertical	48 x 48 x 72 (121.9 x 121.9 x 182.9)	78 x 62 x 120 (198.1 x 157.5 x 304.8)	5600	45	3-low, 1-high	3250	C80V960

Temperatures to 1000°F

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W x D x H inches (cm)	Exterior Dimensions W x D x H inches (cm)	Circulation CFM	Heater Wattage (kW)	Insulation Thickness (Inches)	Shipping Weight	Model Number
12	1000°F	Horizontal	24 x 24 x 36 (61 x 61 x 91.4)	56 x 40 x 83 (142.2 x 101.6 x 210.8)	1200	18	3-low, 2-high	1400	C100H120
12	1000°F	Vertical	24 x 24 x 36 (61 x 61 x 91.4)	56 x 40 x 83 (142.2 x 101.6 x 210.8)	1200	18	3-low, 2-high	1400	C100V120
24	1000°F	Horizontal	24 x 36 x 48 (61 x 91.4 x 121.9)	56 x 52 x 95 (142.2 x 132.1 x 241.3)	1800	24	3-low, 2-high	1600	C100H240
24	1000°F	Vertical	24 x 36 x 48 (61 x 91.4 x 121.9)	56 x 52 x 95 (142.2 x 132.1 x 241.3)	1800	24	3-low, 2-high	1600	C100V240
31	1000°F	Horizontal	30 x 30 x 60 (76.2 x 76.2 x 152.4)	62 x 46 x 107 (157.5 x 116.8 x 271.8)	2300	27	3-low, 2-high	1750	C100H310
31	1000°F	Vertical	30 x 30 x 60 (76.2 x 76.2 x 152.4)	62 x 46 x 107 (157.5 x 116.8 x 271.8)	2300	27	3-low, 2-high	1750	C100V310
36	1000°F	Horizontal	36 x 36 x 48 (91.4 x 91.4 x 121.9)	68 x 52 x 95 (172.7 x 132.1 x 241.3)	2700	30	3-low, 2-high	1950	C100H360
36	1000°F	Vertical	36 x 36 x 48 (91.4 x 91.4 x 121.9)	68 x 52 x 95 (172.7 x 132.1 x 241.3)	2700	30	3-low, 2-high	1950	C100V360
45	1000°F	Horizontal	36 x 36 x 60 (91.4 x 91.4 x 152.4)	68 x 52 x 107 (172.7 x 132.1 x 271.8)	3200	33	3-low, 2-high	2300	C100H450
45	1000°F	Vertical	36 x 36 x 60 (91.4 x 91.4 x 152.4)	68 x 52 x 107 (172.7 x 132.1 x 271.8)	3200	33	3-low, 2-high	2300	C100V450
54	1000°F	Horizontal	36 x 36 x 72 (91.4 x 91.4 x 182.9)	68 x 52 x 120 (172.7 x 132.1 x 304.8)	3600	36	3-low, 2-high	2600	C100H540
54	1000°F	Vertical	36 x 36 x 72 (91.4 x 91.4 x 182.9)	68 x 52 x 120 (172.7 x 132.1 x 304.8)	3600	36	3-low, 2-high	2600	C100V540
72	1000°F	Horizontal	36 x 48 x 72 (91.4 x 121.9 x 182.9)	68 x 64 x 120 (172.7 x 162.6 x 304.8)	4500	45	3-low, 2-high	3100	C100H720
72	1000°F	Vertical	36 x 48 x 72 (91.4 x 121.9 x 182.9)	68 x 64 x 120 (172.7 x 162.6 x 304.8)	4500	45	3-low, 2-high	3100	C100V720
96	1000°F	Horizontal	48 x 48 x 72 (121.9 x 121.9 x 182.9)	80 x 64 x 122 (203.2 x 162.6 x 309.9)	5800	45	3-low, 2-high	3400	C100H960
96	1000°F	Vertical	48 x 48 x 72 (121.9 x 121.9 x 182.9)	80 x 64 x 122 (203.2 x 162.6 x 309.9)	5800	45	3-low, 2-high	3400	C100V960

Temperatures to 1200°F

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W x D x H inches (cm)	Exterior Dimensions W x D x H inches (cm)	Circulation CFM	Heater Wattage (kW)	Insulation Thickness (Inches)	Shipping Weight	Model Number
12	1200°F	Horizontal	24 x 24 x 36 (61 x 61 x 91.4)	58 x 42 x 85 (147.3 x 106.7 x 215.9)	1500	22.5	4-low, 2-high	1600	C120H120
12	1200°F	Vertical	24 x 24 x 36 (61 x 61 x 91.4)	58 x 42 x 85 (147.3 x 106.7 x 215.9)	1500	22.5	4-low, 2-high	1600	C120V120
24	1200°F	Horizontal	24 x 36 x 48 (61 x 91.4 x 121.9)	58 x 54 x 97 (147.3 x 137.2 x 246.4)	2100	27	4-low, 2-high	1800	C120H240
24	1200°F	Vertical	24 x 36 x 48 (61 x 91.4 x 121.9)	58 x 54 x 97 (147.3 x 137.2 x 246.4)	2100	27	4-low, 2-high	1800	C120V240
31	1200°F	Horizontal	30 x 30 x 60 (76.2 x 76.2 x 152.4)	64 x 48 x 109 (162.6 x 121.9 x 276.9)	2600	30	4-low, 2-high	1950	C120H310
31	1200°F	Vertical	30 x 30 x 60 (76.2 x 76.2 x 152.4)	64 x 48 x 109 (162.6 x 121.9 x 276.9)	2600	30	4-low, 2-high	1950	C120V310
36	1200°F	Horizontal	36 x 36 x 48 (91.4 x 91.4 x 121.9)	70 x 54 x 97 (177.8 x 137.2 x 246.4)	3000	33	4-low, 2-high	2150	C120H360
36	1200°F	Vertical	36 x 36 x 48 (91.4 x 91.4 x 121.9)	70 x 54 x 97 (177.8 x 137.2 x 246.4)	3000	33	4-low, 2-high	2150	C120V360
45	1200°F	Horizontal	36 x 36 x 60 (91.4 x 91.4 x 152.4)	70 x 54 x 109 (177.8 x 137.2 x 276.9)	3600	36	4-low, 2-high	2500	C120H450
45	1200°F	Vertical	36 x 36 x 60 (91.4 x 91.4 x 152.4)	70 x 54 x 109 (177.8 x 137.2 x 276.9)	3600	36	4-low, 2-high	2500	C120V450
54	1200°F	Horizontal	36 x 36 x 72 (91.4 x 91.4 x 182.9)	70 x 54 x 122 (177.8 x 137.2 x 309.9)	4000	45	4-low, 2-high	2800	C120H540
54	1200°F	Vertical	36 x 36 x 72 (91.4 x 91.4 x 182.9)	70 x 54 x 122 (177.8 x 137.2 x 309.9)	4000	45	4-low, 2-high	2800	C120V540
72	1200°F	Horizontal	36 x 48 x 72 (91.4 x 121.9 x 182.9)	70 x 66 x 122 (177.8 x 167.6 x 309.9)	4800	45	4-low, 2-high	3300	C120H720
72	1200°F	Vertical	36 x 48 x 72 (91.4 x 121.9 x 182.9)	70 x 66 x 122 (177.8 x 167.6 x 309.9)	4800	45	4-low, 2-high	3300	C120V720
96	1200°F	Horizontal	48 x 48 x 72 (121.9 x 121.9 x 182.9)	82 x 66 x 124 (208.3 x 167.6 x 315)	6200	48	4-low, 2-high	3600	C120H960
96	1200°F	Vertical	48 x 48 x 72 (121.9 x 121.9 x 182.9)	82 x 66 x 124 (208.3 x 167.6 x 315)	6200	48	4-low, 2-high	3600	C120V960

Economy Cabinet Ovens

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W x D x H inches (cm)	Exterior Dimensions W x D x H inches (cm)	Circulation CFM@70°F	Heater Wattage (kW)	Insulation Thickness (Inches)	Shipping Weight	Model Number
24	400°F	Vertical	30 x 30 x 45 (76.2 x 76.2 x 114.3)	36 x 40.5 x 77 (91.4 x 102.9 x 195.6)	1150	9	3	1500	CG45V240
24	600°F	Vertical	30 x 30 x 45 (76.2 x 76.2 x 114.3)	36 x 40.5 x 77 (91.4 x 102.9 x 195.6)	1150	12	3	1500	CG65V240
46.8	400°F	Horizontal	50 x 30 x 54 (127 x 76.2 x 137.2)	66 x 38 x 74.5 (167.6 x 96.5 x 189.2)	1100	7.5	4	2000	CS40H47
46.8	600°F	Horizontal	50 x 30 x 54 (127 x 76.2 x 137.2)	66 x 38 x 74.5 (167.6 x 96.5 x 189.2)	1100	12	4	2000	CS60H47
58.3	400°F	Horizontal	56 x 30 x 60 (142.2 x 76.2 x 152.4)	72 x 38 x 81 (182.9 x 96.5 x 205.7)	1100	9	4	2500	CS40H58
58.3	600°F	Horizontal	56 x 30 x 60 (142.2 x 76.2 x 152.4)	72 x 38 x 81 (182.9 x 96.5 x 205.7)	1100	15	4	2500	CS50H58

All specifications are subject to change without notice.



»» Gruenberg

Truck-in Industrial Ovens

Truck-In Ovens

Gruenberg Oven Company designs and manufactures a complete line of standard and custom truck-in industrial ovens to accommodate a variety of thermal processing applications up to 1200°F. Our industrial truck-in ovens are ideally suited for powder coating, drum heating, aging, core hardening, drying, preheating, curing, and component testing.

With additional options, these truck-in industrial ovens can also be used for applications such as paint baking, plastic curing, varnish baking, sterilizing, and rubber and epoxy curing.

▶ Loading Trucks for Gruenberg Truck-In Ovens

Gruenberg has a complete line of standard trucks specially designed to work with our industrial truck in ovens.

▶ Features

- Heavy-duty, fully welded structural steel frame
- CHIL construction ensures minimal heat transfer from oven chamber to the exterior
- Removable side and back walls for easy clean-up and maintenance
- Lid is constructed using a structural steel frame to ensure sealing integrity
- Insulation is moisture-proof, non-combustible, non-settling, and asbestos-free
- Energy-efficient, Incoloy® sheathed, seamless tubular heaters
- Heating elements are suspended in the plenum, which is adjacent to the process chamber so there is no radiant influence on the work in process



Custom Truck-In Oven



Class A Panelized Truck-In Oven



Silver Select Panelized Truck-In Oven



Custom Truck-In Oven

All specifications are subject to change without notice.

Temperatures to 450°F

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W" x D" x H"	Exterior Dimensions W" x D" x H"	Circulation CFM	Heater Wattage (kW)	Insulation Thickness (Inches)	Shipping Weight	Model Number
12	450	Vertical	24 x 24 x 36	54 x 38 x 80	600	9	4 low	900	T45V120
12	450	Horizontal	24 x 24 x 36	54 x 38 x 80	600	9	4 low	900	T45H120
24	450	Vertical	24 x 36 x 48	54 x 50 x 92	1200	12	4 low	1100	T45V240
24	450	Horizontal	24 x 36 x 48	54 x 50 x 92	1200	12	4 low	1100	T45H240
31	450	Vertical	30 x 30 x 60	60 x 44 x 104	1550	15	4 low	1250	T45V310
31	450	Horizontal	30 x 30 x 60	60 x 44 x 104	1550	15	4 low	1250	T45H310
36	450	Vertical	36 x 36 x 48	66 x 50 x 92	1800	18	4 low	1450	T45V360
36	450	Horizontal	36 x 36 x 48	66 x 50 x 92	1800	18	4 low	1450	T45H360
45	450	Vertical	36 x 36 x 60	66 x 50 x 104	2250	24	4 low	1800	T45V450
45	450	Horizontal	36 x 36 x 60	66 x 50 x 104	2250	24	4 low	1800	T45H450
54	450	Vertical	36 x 36 x 72	66 x 50 x 117	2700	24	4 low	2100	T45V540
54	450	Horizontal	36 x 36 x 72	66 x 50 x 117	2700	24	4 low	2100	T45H540
72	450	Vertical	36 x 48 x 72	66 x 62 x 117	3600	27	4 low	2600	T45V720
72	450	Horizontal	36 x 48 x 72	66 x 62 x 117	3600	27	4 low	2600	T45H720
96	450	Vertical	48 x 48 x 72	78 x 62 x 119	4800	30	4 low	2900	T45V960
96	450	Horizontal	48 x 48 x 72	78 x 62 x 119	4800	30	4 low	2900	T45H960
144	450	Comp. Horiz.	48 x 72 x 72	69 x 129 x 88	10500	36	4 low	4680	TK45C144
192	450	Comp. Horiz.	48 x 96 x 72	69 x 153 x 88	13000	45	4 low	5280	TK45C192
204	450	Comp. Horiz.	68 x 72 x 72	91 x 129 x 88	14000	45	4 low	5520	TK45C204
240	450	Comp. Horiz.	48 x 120 x 72	71 x 177 x 88	16000	48	4 low	5400	TK45C240
272	450	Comp. Horiz.	68 x 96 x 72	93 x 153 x 88	18000	54	4 low	6600	TK45C272
340	450	Comp. Horiz.	68 x 120 x 72	93 x 177 x 88	21000	60	4 low	7800	TK45C340
384	450	Comp. Horiz.	96 x 96 x 72	123 x 153 x 88	24500	72	4 low	9216	TK45C384
480	450	Comp. Horiz.	96 x 120 x 72	125 x 177 x 88	29500	90	4 low	11520	TK45C480

Temperatures to 650°F

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W" x D" x H"	Exterior Dimensions W" x D" x H"	Circulation CFM	Heater Wattage (kW)	Insulation Thickness (Inches)	Shipping Weight	Model Number
12	650	Vertical	24 x 24 x 36	54 x 38 x 80	900	12	4 low	1000	T65V120
12	650	Horizontal	24 x 24 x 36	54 x 38 x 80	900	12	4 low	1000	T65H120
24	650	Vertical	24 x 36 x 48	54 x 50 x 92	1500	18	4 low	1200	T65V240
24	650	Horizontal	24 x 36 x 48	54 x 50 x 92	1500	18	4 low	1200	T65H240
31	650	Vertical	30 x 30 x 60	60 x 44 x 104	1800	24	4 low	1350	T65V310
31	650	Horizontal	30 x 30 x 60	66 x 44 x 104	1800	24	4 low	1350	T65H310
36	650	Vertical	36 x 36 x 48	66 x 50 x 92	2400	24	4 low	1550	T65V360
36	650	Horizontal	36 x 36 x 48	66 x 50 x 92	2400	24	4 low	1550	T65H360
45	650	Vertical	36 x 36 x 60	66 x 50 x 104	3000	27	4 low	1900	T65V450
45	650	Horizontal	36 x 36 x 60	66 x 50 x 104	3000	27	4 low	1900	T65H450
54	650	Vertical	36 x 36 x 72	66 x 50 x 117	3250	30	4 low	2200	T65V540
54	650	Horizontal	36 x 36 x 72	66 x 50 x 117	3250	30	4 low	2200	T65H540
72	650	Vertical	36 x 48 x 72	66 x 62 x 117	4200	36	4 low	2700	T65V720
72	650	Horizontal	36 x 48 x 72	66 x 62 x 117	4200	36	4 low	2700	T65H720
96	650	Vertical	48 x 48 x 72	78 x 62 x 119	5500	36	4 low	3000	T65V960
96	650	Horizontal	48 x 48 x 72	78 x 62 x 119	5500	36	4 low	3000	T65H960
144	650	Comp. Horiz.	48 x 72 x 72	69 x 129 x 88	12500	48	4 low	4680	TK65C144
192	650	Comp. Horiz.	48 x 96 x 72	69 x 153 x 88	15500	54	4 low	5280	TK65C192
204	650	Comp. Horiz.	68 x 72 x 72	91 x 129 x 88	17000	54	4 low	5520	TK65C204
240	650	Comp. Horiz.	48 x 120 x 72	71 x 177 x 88	19500	72	4 low	5400	TK65C240
272	650	Comp. Horiz.	68 x 96 x 72	93 x 153 x 88	22000	72	4 low	6600	TK65C272
340	650	Comp. Horiz.	68 x 120 x 72	93 x 177 x 88	26000	90	4 low	7800	TK65C340
384	650	Comp. Horiz.	96 x 96 x 72	123 x 153 x 88	30000	90	4 low	9216	TK65C384
480	650	Comp. Horiz.	96 x 120 x 72	125 x 177 x 88	35500	108	4 low	11520	TK65C480

Temperatures to 800°F

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W" x D" x H"	Exterior Dimensions W" x D" x H"	Circulation CFM	Heater Wattage (kW)	Insulation Thickness (Inches)	Shipping Weight	Model Number
12	800	Vertical	24 x 24 x 36	54 x 38 x 80	1000	15	3 low, 1 high	1150	T80V120
12	800	Horizontal	24 x 24 x 36	54 x 38 x 80	1000	15	3 low, 1 high	1150	T80H120
24	800	Vertical	24 x 36 x 48	54 x 50 x 92	1600	24	3 low, 1 high	1350	T80V240
24	800	Horizontal	24 x 36 x 48	54 x 50 x 92	1600	24	3 low, 1 high	1350	T80H240
31	800	Vertical	30 x 30 x 60	60 x 44 x 104	2100	24	3 low, 1 high	1550	T80V310
31	800	Horizontal	30 x 30 x 60	60 x 44 x 104	2100	24	3 low, 1 high	1550	T80H310
36	800	Vertical	36 x 36 x 48	66 x 50 x 92	2500	27	3 low, 1 high	1700	T80V360
36	800	Horizontal	36 x 36 x 48	66 x 50 x 92	2500	27	3 low, 1 high	1700	T80H360
45	800	Vertical	36 x 36 x 60	66 x 50 x 104	3100	30	3 low, 1 high	2050	T80V450
45	800	Horizontal	36 x 36 x 60	66 x 50 x 104	3100	30	3 low, 1 high	2050	T80H450
54	800	Vertical	36 x 36 x 72	66 x 50 x 117	3400	36	3 low, 1 high	2350	T80V540
54	800	Horizontal	36 x 36 x 72	66 x 50 x 117	3400	36	3 low, 1 high	2350	T80H540
72	800	Vertical	36 x 48 x 72	66 x 62 x 117	4300	36	3 low, 1 high	2850	T80V720
72	800	Horizontal	36 x 48 x 72	66 x 62 x 117	4300	36	3 low, 1 high	2850	T80H720
96	800	Vertical	48 x 48 x 72	78 x 62 x 119	5600	45	3 low, 1 high	3150	T80V960
96	800	Horizontal	48 x 48 x 72	78 x 62 x 119	5600	45	3 low, 1 high	3150	T80H960
144	800	Comp. Horiz.	48 x 72 x 72	69 x 129 x 88	14000	60	3 low, 1 high	5160	TK80C144
192	800	Comp. Horiz.	48 x 96 x 72	69 x 153 x 88	18000	72	3 low, 1 high	5760	TK80C192
204	800	Comp. Horiz.	68 x 72 x 72	91 x 129 x 88	19500	90	3 low, 1 high	6000	TK80C204
240	800	Comp. Horiz.	48 x 120 x 72	71 x 177 x 88	22000	90	3 low, 1 high	5880	TK80C240
272	800	Comp. Horiz.	68 x 96 x 72	93 x 153 x 88	25000	108	3 low, 1 high	7080	TK80C272
340	800	Comp. Horiz.	68 x 120 x 72	93 x 177 x 88	25000	108	3 low, 1 high	8280	TK80C340
384	800	Comp. Horiz.	96 x 96 x 72	123 x 153 x 88	34000	126	3 low, 1 high	9720	TK80C384
480	800	Comp. Horiz.	96 x 120 x 72	125 x 177 x 88	40500	144	3 low, 1 high	12000	TK80C480

Temperatures to 1000°F

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W" x D" x H"	Exterior Dimensions W" x D" x H"	Circulation CFM	Heater Wattage (kW)	Insulation Thickness (Inches)	Shipping Weight	Model Number
12	1000	Vertical	24 x 24 x 36	56 x 40 x 82	1200	18	3 low, 2 high	1300	T100V120
12	1000	Horizontal	24 x 24 x 36	56 x 40 x 82	1200	18	3 low, 2 high	1300	T100H120
24	1000	Vertical	24 x 36 x 48	56 x 52 x 94	1800	24	3 low, 2 high	1500	T100V240
24	1000	Horizontal	24 x 36 x 48	56 x 52 x 94	1800	24	3 low, 2 high	1500	T100H240
31	1000	Vertical	30 x 30 x 60	62 x 46 x 106	2300	27	3 low, 2 high	1650	T100V310
31	1000	Horizontal	30 x 30 x 60	62 x 46 x 106	2300	27	3 low, 2 high	1650	T100H310
36	1000	Vertical	36 x 36 x 48	68 x 52 x 94	2700	30	3 low, 2 high	1850	T100V360
36	1000	Horizontal	36 x 36 x 48	68 x 52 x 94	2700	30	3 low, 2 high	1850	T100H360
45	1000	Vertical	36 x 36 x 60	68 x 52 x 106	3200	36	3 low, 2 high	2200	T100V450
45	1000	Horizontal	36 x 36 x 60	68 x 52 x 106	3200	36	3 low, 2 high	2200	T100H450
54	1000	Vertical	36 x 36 x 72	68 x 52 x 119	3600	36	3 low, 2 high	2500	T100V540
54	1000	Horizontal	36 x 36 x 72	68 x 52 x 119	3600	36	3 low, 2 high	2500	T100H540
72	1000	Vertical	36 x 48 x 72	68 x 64 x 119	4500	45	3 low, 2 high	3000	T100V720
72	1000	Horizontal	36 x 48 x 72	68 x 64 x 119	4500	45	3 low, 2 high	3000	T100H720
96	1000	Vertical	48 x 48 x 72	80 x 64 x 121	5800	45	3 low, 2 high	3300	T100V960
96	1000	Horizontal	48 x 48 x 72	80 x 64 x 121	5800	45	3 low, 2 high	3300	T100H960
144	1000	Comp. Horiz.	48 x 72 x 72	69 x 131 x 89	16500	72	3 low, 2 high	6000	TK100C144
192	1000	Comp. Horiz.	48 x 96 x 72	69 x 155 x 89	20500	90	3 low, 2 high	6600	TK100C192
204	1000	Comp. Horiz.	68 x 72 x 72	91 x 131 x 89	22500	108	3 low, 2 high	6840	TK100C204
240	1000	Comp. Horiz.	48 x 120 x 72	71 x 179 x 89	25000	108	3 low, 2 high	6720	TK100C240
272	1000	Comp. Horiz.	68 x 96 x 72	93 x 155 x 89	28500	108	3 low, 2 high	7920	TK100C272
340	1000	Comp. Horiz.	68 x 120 x 72	93 x 179 x 89	33500	126	3 low, 2 high	9210	TK100C340
384	1000	Comp. Horiz.	96 x 96 x 72	123 x 155 x 89	39000	144	3 low, 2 high	10560	TK100C384
480	1000	Comp. Horiz.	96 x 120 x 72	125 x 179 x 89	46500	160	3 low, 2 high	12840	TK100C480

Temperatures to 1200°F

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W" x D" x H"	Exterior Dimensions W" x D" x H"	Circulation CFM	Heater Wattage (kW)	Insulation Thickness (Inches)	Shipping Weight	Model Number
12	1200	Vertical	24 x 24 x 36	58 x 42 x 84	1500	24	4 low, 2 high	1500	T120V120
12	1200	Horizontal	24 x 24 x 36	58 x 42 x 84	1500	24	4 low, 2 high	1500	T120H120
24	1200	Vertical	24 x 36 x 48	58 x 54 x 96	2100	27	4 low, 2 high	1700	T120V240
24	1200	Horizontal	24 x 36 x 48	58 x 54 x 96	2100	27	4 low, 2 high	1700	T120H240
31	1200	Vertical	30 x 30 x 60	64 x 48 x 108	2600	30	4 low, 2 high	1850	T120V310
31	1200	Horizontal	30 x 30 x 60	64 x 48 x 108	2600	30	4 low, 2 high	1850	T120H310
36	1200	Vertical	36 x 36 x 48	70 x 55 x 96	3000	36	4 low, 2 high	2050	T120V360
36	1200	Horizontal	36 x 36 x 48	70 x 55 x 96	3000	36	4 low, 2 high	2050	T120H360
45	1200	Vertical	36 x 36 x 60	70 x 54 x 108	3600	36	4 low, 2 high	2400	T120V450
45	1200	Horizontal	36 x 36 x 60	70 x 54 x 108	3600	36	4 low, 2 high	2400	T120H450
54	1200	Vertical	36 x 36 x 72	70 x 54 x 121	4000	45	4 low, 2 high	2700	T120V540
54	1200	Horizontal	36 x 36 x 72	70 x 54 x 121	4000	45	4 low, 2 high	2700	T120H540
72	1200	Vertical	36 x 48 x 72	70 x 66 x 121	4800	45	4 low, 2 high	3200	T120V720
72	1200	Horizontal	36 x 48 x 72	70 x 66 x 121	4800	45	4 low, 2 high	3200	T120H720
96	1200	Vertical	48 x 48 x 72	82 x 66 x 123	6200	48	4 low, 2 high	3500	T120V960
96	1200	Horizontal	48 x 48 x 72	82 x 66 x 123	6200	48	4 low, 2 high	3500	T120H960
144	1200	Comp. Horiz.	48 x 72 x 72	73 x 133 x 90	19000	90	4 low, 2 high	6960	TK120C144
192	1200	Comp. Horiz.	48 x 96 x 72	73 x 157 x 90	23500	90	4 low, 2 high	7560	TK120C192
204	1200	Comp. Horiz.	68 x 72 x 72	95 x 133 x 90	26000	108	4 low, 2 high	7800	TK120C204
240	1200	Comp. Horiz.	48 x 120 x 72	75 x 181 x 90	29000	108	4 low, 2 high	7680	TK120C240
272	1200	Comp. Horiz.	68 x 96 x 72	97 x 157 x 90	33000	126	4 low, 2 high	8880	TK120C272
340	1200	Comp. Horiz.	68 x 120 x 72	95 x 181 x 90	38500	144	4 low, 2 high	10080	TK120C340
384	1200	Comp. Horiz.	96 x 96 x 72	127 x 157 x 90	45000	144	4 low, 2 high	11520	TK120C384
480	1200	Comp. Horiz.	96 x 120 x 72	127 x 181 x 90	53500	162	4 low, 2 high	13800	TK120C480

Temperatures to 1000°F

Optional Loading Trucks Dimensions and Specifications

Model Number	Interior Dimensions W" x D" x H"	Exterior Dimensions W" x D" x H"	Truck Track Spacing	Shelf Spacing	Number of Shelves Supplied	Number of Shelf Guides	Truck Capacities (lbs.)	Expanded Shelf Capacities (lbs.)	Bar Shelf Capacities (lbs.)
T310	25.5 x 28 x 49.5	26 x 28 x 60	22"	6"	3	8	1200	75	150
T360	28.5 x 34 x 37.5	30 x 34 x 60	28"	6"	3	6	1200	100	200
T450	28.5 x 34 x 49.5	32 x 34 x 60	28"	6"	3	8	1600	100	200
T540	28.5 x 34 x 61.5	32 x 34 x 72	28"	6"	3	10	2000	100	200
T720	28.5 x 46 x 61.5	32 x 46 x 72	28"	6"	3	10	2500	125	250
T960	40.5 x 46 x 61.5	44 x 46 x 72	40"	6"	3	10	3000	150	300
TK144	40.5 x 68 x 61.5	44 x 68 x 72	40"	6"	3	10	3500	175	350
TK192	40.5 x 92 x 61.5	92 x 72 x 40	40"	6"	3	10	4000	200	400
TK240	40.5 x 116 x 61.5	44 x 116 x 72	40"	6"	3	10	5000	250	500
TK204	60.5 x 68 x 61.5	64 x 68 x 72	60"	6"	3	10	3500	175	350
TK272	60.5 x 92 x 61.5	64 x 92 x 60	60"	6"	3	10	4000	200	400
TK340	60.5 x 116 x 61.5	64 x 116 x 72	60"	6"	3	10	5000	250	500
TK384	88.5 x 92 x 61.5	92 x 92 x 72	88"	6"	6*	10	8000	200	400
TK480	88.5 x 116 x 61.5	92 x 116 x 72	88"	6"	6*	10	10000	250	500

* Half Shelves



TPS
Thermal Product Solutions

»» Gruenberg

Explosion-Resistant Ovens

Explosion-Resistant Ovens

All standard Gruenberg Ovens can be modified to be explosion-resistant. Explosion-resistant ovens incorporate design features that allow the oven to be operated within a volatile atmosphere defined as Class I, Group D, or Class II, Group E, F or G.

► Features

- Non-sparking brass explosion relief door latches
- Wiring encased in rigid conduit or approved mineral insulated cable
- Fully welded liners and removable air circulation ducts and baffles (when dusting loads are dried)
- Non-sparking aluminum or brass blowers or circulation fans
- Heating coil sealed within a seamless Incoloy® tubular element
- Electrical connections entering the oven through sealed ports and terminating in approved explosion-resistant housings
- Approved, static-eliminating belt drives
- Explosion-resistant motors
- Approved, explosion-resistant electrical equipment and controls enclosed in explosion-resistant housing or purged boxes



All specifications are subject to change without notice.



»» Gruenberg

Bench Ovens

Bench Ovens

Thermal Product Solutions designs and manufactures a complete line of standard as well as custom bench ovens to accommodate a variety of thermal processing applications. Bench ovens are designed to reach temperatures up to 649°C (1200°F) and are ideal for general lab work, component testing, aging, core hardening, drying or preheating. And, with additional options, they can also be used for applications such as paint baking, plastic curing, varnish baking, sterilizing, rubber and epoxy curing, textile drying, stress relieving and annealing.

► Features

- Heavy-duty, fully welded structural steel frame
- CHIL construction ensures minimal heat transfer from oven chamber to the exterior
- Removable side and back walls for easy clean-up and maintenance
- Structure steel frame doors to ensure sealing integrity
- Insulation is moisture-proof, non-combustible, non-settling and asbestos-free
- Energy-efficient, Incoloy® sheathed, seamless tubular heaters are standard
- Heating elements are suspended in the plenum adjacent to, but separate from, the process chamber
- High-volume compound horizontal air flow system to ensure uniform heat distribution while optimizing heating and drying efficiencies



Temperatures to 450°F

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W" x D" x H" (cm)	Shipping Weight	Model Number
4.6	450°F	Horizontal	20 x 20 x 20 (50.8 x 50.8 x 50.8)	300	B45H46
10	450°F	Horizontal	26 x 26 x 26 (66 x 66 x 66)	370	B45H100
15.6	450°F	Horizontal	30 x 30 x 30 (76.2 x 76.2 x 76.2)	570	B45H156
27	450°F	Horizontal	36 x 36 x 36 (91.4 x 91.4 x 91.4)	900	B45H270

Temperatures to 650°F

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W" x D" x H" (cm)	Shipping Weight	Model Number
10	650°F	Horizontal	26 x 26 x 26 (66 x 66 x 66)	390	B65H100
15.6	650°F	Horizontal	30 x 30 x 30 (76.2 x 76.2 x 76.2)	600	B65H156
27	650°F	Horizontal	36 x 36 x 36 (91.4 x 91.4 x 91.4)	950	B65H270

Temperatures to 800°F

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W" x D" x H" (cm)	Shipping Weight	Model Number
4.6	800°F	Comp. Horiz.	20 x 20 x 20 (50.8 x 50.8 x 50.8)	450	B80C46
10	800°F	Comp. Horiz.	26 x 26 x 26 (66 x 66 x 66)	550	B80C100
15.6	800°F	Comp. Horiz.	30 x 30 x 30 (76.2 x 76.2 x 76.2)	800	B80C156
27	800°F	Comp. Horiz.	36 x 36 x 36 (91.4 x 91.4 x 91.4)	1100	B80C270

Temperatures to 1000°F

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W" x D" x H" (cm)	Shipping Weight	Model Number
4.6	1000°F	Comp. Horiz.	20 x 20 x 20 (50.8 x 50.8 x 50.8)	450	B100C46
10	1000°F	Comp. Horiz.	26 x 26 x 26 (66 x 66 x 66)	550	B100C100
15.6	1000°F	Comp. Horiz.	30 x 30 x 30 (76.2 x 76.2 x 76.2)	800	B100C156
27	1000°F	Comp. Horiz.	36 x 36 x 36 (91.4 x 91.4 x 91.4)	1100	B100C270

Temperatures to 1200°F

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W" x D" x H" (cm)	Shipping Weight	Model Number
4.6	1200°F	Comp. Horiz.	20 x 20 x 20 (50.8 x 50.8 x 50.8)	450	B120C46
10	1200°F	Comp. Horiz.	26 x 26 x 26 (66 x 66 x 66)	605	B120C100
15.6	1200°F	Comp. Horiz.	30 x 30 x 30 (76.2 x 76.2 x 76.2)	880	B120C156
27	1200°F	Comp. Horiz.	36 x 36 x 36 (91.4 x 91.4 x 91.4)	1210	B120C270

All specifications are subject to change without notice.



»» Gruenberg

Top-Loading Ovens

Top-Loading Industrial Ovens for Burn-In, Calibration and Down-hole Simulation

Gruenberg designs and manufactures a complete line of standard and custom top-loading ovens to accommodate a variety of thermal processing applications. Top-loading ovens are designed to reach temperatures of 1000°F and are ideally suited for:

- Oil and gas drill sites
- Down-hole condition simulation
- Electronic instrument calibration
- Core hardening
- Preheating
- Component testing
- Stress relieving
- Heat treating
- Tempering

The custom top-loading ovens simulate the down-hole thermal conditions in oil and gas drilling operations. The ovens can be used to calibrate electronic logging instruments and for drilling equipment burn-in. The ovens feature heavy duty dollies and can be used right at the drill site.

Oven temperatures reach a maximum of 1000°F and accommodate various capacities ranging from 4.6 to 27 cubic feet. The ovens load from the top to allow heavy equipment to be loaded into the test chamber by crane.



Non-metallic models are available



450°F Maximum Temperature

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W" x D" x H" (cm)	Exterior Dimensions W" x D" x H" (cm)	Circulation CFM	Heater Wattage (KW)	Insulation Thickness (inches)	Shipping Weight	Model Number
4.6	450°F	Horizontal	20 x 20 x 20 (50.8 x 50.8 x 50.8)	44 x 36 x 29 (111.8 x 91.4 x 73.7)	800	3	4 low	300	TL45C46
7	450°F	Horizontal	30 x 20 x 20 (76.2 x 50.8 x 50.8)	54 x 36 x 29 (137.2 x 91.4 x 73.7)	800	3	4 low	350	TL45C70
8	450°F	Horizontal	24 x 24 x 24 (61 x 61 x 61)	48 x 40 x 33 (121.9 x 101.6 x 83.8)	800	3	4 low	375	TL45C80
10	450°F	Horizontal	30 x 24 x 24 (76.2 x 61 x 61)	54 x 40 x 33 (137.2 x 101.6 x 83.8)	800	6	4 low	400	TL45C100
12.5	450°F	Horizontal	30 x 24 x 30 (76.2 x 61 x 76.2)	54 x 40 x 39 (137.2 x 101.6 x 99.1)	1150	6	4 low	500	TL45C125
15.6	450°F	Horizontal	30 x 30 x 30 (76.2 x 76.2 x 76.2)	54 x 46 x 39 (137.2 x 116.8 x 99.1)	1150	9	4 low	600	TL45C156
27	450°F	Horizontal	36 x 36 x 36 (91.4 x 91.4 x 91.4)	60 x 52 x 45 (152.4 x 132.1 x 114.3)	1900	12	4 low	900	TL45C270

650°F Maximum Temperature

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W" x D" x H" (cm)	Exterior Dimensions W" x D" x H" (cm)	Circulation CFM	Heater Wattage (KW)	Insulation Thickness (inches)	Shipping Weight	Model Number
4.6	650°F	Horizontal	20 x 20 x 20 (50.8 x 50.8 x 50.8)	44 x 36 x 29 (111.8 x 91.4 x 73.7)	800	6	4 low	325	TL65C46
7	650°F	Horizontal	30 x 20 x 20 (76.2 x 50.8 x 50.8)	54 x 36 x 29 (137.2 x 91.4 x 73.7)	800	6	4 low	375	TL65C70
8	650°F	Horizontal	24 x 24 x 24 (61 x 61 x 61)	48 x 40 x 33 (121.9 x 101.6 x 83.8)	800	6	4 low	400	TL65C80
10	650°F	Horizontal	30 x 24 x 24 (76.2 x 61 x 61)	54 x 40 x 33 (137.2 x 101.6 x 83.8)	800	9	4 low	425	TL65C100
12.5	650°F	Horizontal	30 x 24 x 30 (76.2 x 61 x 76.2)	54 x 40 x 39 (137.2 x 101.6 x 99.1)	1150	9	4 low	550	TL65C125
15.6	650°F	Horizontal	30 x 30 x 30 (76.2 x 76.2 x 76.2)	54 x 46 x 39 (137.2 x 116.8 x 99.1)	1150	12	4 low	650	TL65C156
27	650°F	Horizontal	36 x 36 x 36 (91.4 x 91.4 x 91.4)	60 x 52 x 45 (152.4 x 132.1 x 114.3)	1900	15	4 low	1000	TL65C270

All specifications are subject to change without notice.

800°F Maximum Temperature

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W" x D" x H" (cm)	Exterior Dimensions W" x D" x H" (cm)	Circulation CFM	Heater Wattage (KW)	Insulation Thickness (inches)	Shipping Weight	Model Number
4.6	800°F	Horizontal	20 x 20 x 20 (50.8 x 50.8 x 50.8)	44 x 36 x 29 (111.8 x 91.4 x 73.7)	600	9	3 low, 1 high	400	TL80C46
7	800°F	Horizontal	30 x 20 x 20 (76.2 x 50.8 x 50.8)	54 x 36 x 29 (137.2 x 91.4 x 73.7)	600	9	3 low, 1 high	450	TL80C70
8	800°F	Horizontal	24 x 24 x 24 (61 x 61 x 61)	48 x 40 x 33 (121.9 x 101.6 x 83.8)	700	9	3 low, 1 high	475	TL80C80
10	800°F	Horizontal	30 x 24 x 24 (76.2 x 61 x 61)	54 x 40 x 33 (137.2 x 101.6 x 83.8)	850	12	3 low, 1 high	525	TL80C100
12.5	800°F	Horizontal	30 x 24 x 30 (76.2 x 61 x 76.2)	54 x 40 x 39 (137.2 x 101.6 x 99.1)	1000	12	3 low, 1 high	650	TL80C125
15.6	800°F	Horizontal	30 x 30 x 30 (76.2 x 76.2 x 76.2)	54 x 46 x 39 (137.2 x 116.8 x 99.1)	1000	15	3 low, 1 high	750	TL80C156
27	800°F	Horizontal	36 x 36 x 36 (91.4 x 91.4 x 91.4)	60 x 52 x 45 (152.4 x 132.1 x 114.3)	1500	18	3 low, 1 high	1150	TL80C270

1000°F Maximum Temperature

Capacity ft ³	Maximum Temperature	Air flow	Interior Dimensions W" x D" x H" (cm)	Exterior Dimensions W" x D" x H" (cm)	Circulation CFM	Heater Wattage (KW)	Insulation Thickness (inches)	Shipping Weight	Model Number
4.6	1000°F	Horizontal	20 x 20 x 20 (50.8 x 50.8 x 50.8)	44 x 36 x 29 (111.8 x 91.4 x 73.7)	700	12	3 low, 2 high	500	TL100C46
7	1000°F	Horizontal	30 x 20 x 20 (76.2 x 50.8 x 50.8)	54 x 36 x 29 (137.2 x 91.4 x 73.7)	700	12	3 low, 2 high	550	TL100C70
8	1000°F	Horizontal	24 x 24 x 24 (61 x 61 x 61)	48 x 40 x 33 (121.9 x 101.6 x 83.8)	850	12	3 low, 2 high	575	TL100C80
10	1000°F	Horizontal	30 x 24 x 24 (76.2 x 61 x 61)	54 x 40 x 33 (137.2 x 101.6 x 83.8)	1000	15	3 low, 2 high	600	TL100C100
12.5	1000°F	Horizontal	30 x 24 x 30 (76.2 x 61 x 76.2)	54 x 40 x 39 (137.2 x 101.6 x 99.1)	1000	15	3 low, 2 high	750	TL100C125
15.6	1000°F	Horizontal	30 x 30 x 30 (76.2 x 76.2 x 76.2)	54 x 46 x 39 (137.2 x 116.8 x 99.1)	1500	18	3 low, 2 high	900	TL100C156
27	1000°F	Horizontal	36 x 36 x 36 (91.4 x 91.4 x 91.4)	60 x 52 x 45 (152.4 x 132.1 x 114.3)	2500	24	3 low, 2 high	1300	TL100C270

All specifications are subject to change without notice.



»» Gruenberg

Powder-Coating Ovens

Powder-Coating Ovens

Gruenberg's 96-cubic-foot modular walk-in powder-coating industrial oven offers many benefits to the paint, powder, and coatings industry. Our MPC45.96 powder-coating industrial oven features a bolted flange angle construction that allows for the back wall panel to be removed to add an additional 96-cubic-foot module, doubling the production capacity.



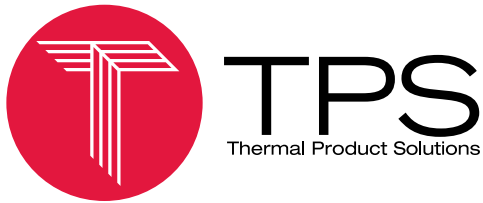
► Features

- Cold-rolled steel exterior
- Lift hooks for easy location
- Aluminized steel interior
- Ceiling capable of supporting a hanger bar loaded with 250 lbs.
- Two circulation fans with a total of 1200 CFM
- Circulation motors totally enclosed in control panel
- Split double doors available to reduce floorspace requirements
- 18 kW of heat input per heating module
- Seamless, tubular heating elements
- Controlled by solid-state relays
- Watlow high-limit thermostat for safety
- All necessary fusing to protect components
- Single setpoint temperature controller
- Digital process timer to shut heat off at end of timed cycle

Work Chamber

Model Designation	Interior Volume (Cu. Ft.)	Interior Dimensions W x D x H in (cm)	Exterior Dimensions W x D X H in (cm)
45.35	35	39 x 39 x 40 (99.1 x 99.1 x 101.6)	65.25 x 47.8 x 51.86 (165.7 x 121.4 x 131.7)
45.96	96	48 x 48 x 72 (121.9 x 121.9 x 182.9)	72.5 x 57 x 79 (184.2 x 144.8 x 200.7)
45.216	216	72 x 72 x 84 (182.9 x 182.9 x 213.4)	N/A
45.392	392	84 x 84 x 84 (213.4 x 213.4 x 213.4)	N/A
45.512	512	96 x 96 x 96 (243.8 x 243.8 x 243.8)	N/A

All specifications are subject to change without notice.



»» Gruenberg

Solvent-Venting Industrial Ovens

Solvent-Venting Ovens

All standard Gruenberg ovens can be designed to house volatile atmospheres. Thermal Product Solutions designs all Class A ovens to conform to OSHA, NFPA 86A, Factory Mutual (FM) and Factory Insurance Association (FIA) requirements.

As part of the safety design, Class A ovens must be equipped with a high exhaust rate: because the heating elements are an ignition source, a high exhaust rate is needed to dilute the volatile vapors below the "lower explosive limits." As a result, the heating elements' kW must be sufficiently increased to compensate for the heat loss caused by the above-normal exhaust rate. In addition, for a Class A oven to be energy efficient, the additional kW required must be carefully calculated according to solvent load and operating temperature requirements.

► Features

- Explosion venting
- Separate power exhauster
- Heating systems interlocked by differential switches
- Purge timer
- High-limit thermostat
- Second heater contactor for electric ovens
- Door switch
- Markings including various warning labels and a capacity curve
- Automatic electric ignition with pilot flame supervision by an electronic device for gas ovens



All specifications are subject to change without notice.



»» Gruenberg

Custom Ovens

Custom Pharmaceutical Ovens

Gruenberg designs and manufactures custom pharmaceutical industrial ovens based on your requirements.

Pharmaceutical Granulation Dryers

Gruenberg designs and manufactures a complete line of standard and custom pharmaceutical granulation dryers with capacities from 15 to 800 cubic feet.

Pharmaceutical Sterilizers and Depyrogenation Ovens

Our pharmaceutical sterilizer is cGMP compliant, flush front, and offers more standard features than competing models.

Custom Pharmaceutical Ovens

Gruenberg manufactures a custom pharmaceutical conveyor oven used to precisely and consistently dehydrate pharmaceutical oven solutions. Air is HEPA filtered to achieve Class 100 environment. Vertical down air flow with adjustable velocity for fine tuning of the process.





»» Gruenberg

Dry Heat Cabinet Sterilizer

Dry Heat Cabinet Style Lab Animal Science Sterilizer

The Gruenberg SteriDry™ Dry Heat Lab Animal Science Sterilizer provides the animal care market with equipment to sterilize animal habitat cages through the process of dry-heat sterilization. These sterilizers are designed and built for lab animal science applications.



Model Designation	Interior Volume (Cu. Ft.)	Interior Dimensions W x D x H in (cm)	Exterior Dimensions W x D X H in (cm)
VCS35VU15.8(PT)SS	16	35 x 26 x 30 (88.9 x 66 x 76.2)	61.6 x 39.9 x 78.6 (156.5 x 101.3 x 199.6)
VTS35VU15.8(PT)SS	16	35 x 26 x 30 (88.9 x 66 x 76.2)	61.6 x 39.9 x 78.6 (156.5 x 101.3 x 199.6)

► Features

- Maximum temperature of 340°F
- Heavy-duty, fully welded structural steel frame
- Exterior constructed of 18-gauge 304 L stainless steel with a #4 polish to withstand frequent wash downs
- Direct drive circulation system
- All interior surfaces are 100 percent continuously welded

► CHIL Construction

- Separated, insulated inner and outer surfaces
- Pliable, final seal silicone rubber gaskets on oven up to 650°F
- Less energy to maintain temperature
- Air-conditioning equipment doesn't work as hard
- Heavy-duty construction
- Built around welded, structural steel frame
- One-piece unitized construction costs less to install
- Pre-tested, ready for operation
- Motor and blowers to circulate air for uniform atmosphere
- Variable-speed pulley for circulation adjustment (CFM)
- Heater elements are Inconel sheathed nichrome wire coil



TPS
Thermal Product Solutions

» Gruenberg

POD Dry Heat Sterilizer

POD Dry Heat Lab Animal Science Sterilizer

The Gruenberg SteriDry™ Dry Heat Lab Animal Science Sterilizer provides the animal care market with equipment to sterilize animal habitat cages through the process of dry-heat sterilization. These sterilizers are designed and built for lab animal science applications.

Oven Dimensions	Width	Depth	Height	Shipping Weight
Chamber Interior	26	24	30	Approx. 1,000 lbs.
Chamber Exterior	49.11	30.75	79.875 overall ±.75 for adj. legs	
Facility Requirements				
Electrical	kW	Air	Chilled Water	
208V / 3 PH / 60 Hz	10.7 kW (38 FLA)	20-150 PSIG 5-20 SCFM	N/A	

► Features

- Heavy-duty, fully welded structural steel frame
- Exterior constructed of 18-gauge 304 L stainless steel with a #4 polish
- Direct drive circulation system
- 100 percent continuously welded interior surfaces
- Plate steel floor
- Detachable cage pods
- Door latch
- Accommodates 72 rodent cages in eight stacks of nine
- Maximum temperature of 350°F
- Uniformity: ± 5°F

► CHIL Construction

- Separated, insulated inner and outer surfaces
- Pliable, final seal silicone rubber gaskets on oven up to 650°F
- Less energy to maintain temperature
- Air-conditioning equipment doesn't work as hard
- Heavy-duty construction
- Built around welded, structural steel frame
- One-piece unitized construction costs less to install
- Pre-tested, ready for operation
- Motor and blowers to circulate air for uniform atmosphere
- Variable-speed pulley for circulation adjustment (CFM)
- Heater elements are Inconel sheathed nichrome wire coil





»» Gruenberg

Dry Heat Closed Container Sterilizer

Dry Heat Closed Container Style Lab Animal Science Sterilizer

The Gruenberg SteriDry™ Dry Heat Lab Animal Science Sterilizer provides the animal care market with equipment to sterilize animal habitat cages through the process of dry-heat sterilization. These sterilizers are designed and built for lab animal science applications.



Model Designation	Interior Volume (Cu. Ft.)	Interior Dimensions W x D x H in (cm)	Exterior Dimensions W x D X H in (cm)	Trucks	Cages per Truck	Total # Cages
VS40VU90SS	90	60 x 35 x 74 (152.4 x 88.9 x 188)	68.75 x 83.67 x 90.44 (174.6 x 212.5 x 229.7)	2	192	384
VS40VU135SS	135	90 x 35 x 74 (228.6 x 88.9 x 188)	98.75 x 83.67 x 90.44 (250.8 x 212.5 x 229.7)	3	192	576
VS40VU162SS	162	90 x 42 x 74 (228.6 x 106.6 x 188)	98.75 x 90.67 x 90.44 (250.8 x 230.3 x 229.7)	3	288	864

Based on cage size of 7.5" x 11" x 5"

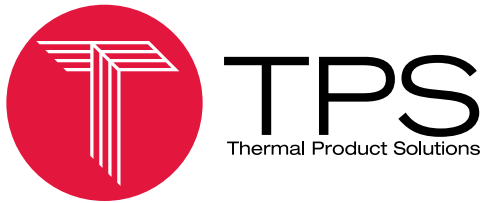
Optional design specific equipment to meet custom throughput requirements

► Features

- Individual zones
- HEPA filtration
- Heavy-duty, fully welded structural steel frame
- 18-gauge 304 L stainless steel exterior with #4 polish
- Direct drive circulation system
- 100 percent continuously welded interior surfaces
- Plate steel floor
- Truck transfer cart system
- Self-contained cooling
- Integrated rail systems
- Forced exhauster
- Modular construction
- Vertical up air circulation
- NEMA 12 control panel
- Maximum temperature: 400°F
- Allen Bradley panelview control system

► CHIL Construction

- Separated, insulated inner and outer surfaces
- Pliable, final seal silicone rubber gaskets on oven up to 650°F
- Less energy to maintain temperature
- Air-conditioning equipment doesn't work as hard
- Heavy-duty construction
- Built around welded, structural steel frame
- One-piece unitized construction costs less to install
- Pre-tested, ready for operation
- Motor and blowers to circulate air for uniform atmosphere
- Variable-speed pulley for circulation adjustment (CFM)
- Heater elements are Inconel sheathed nichrome wire coil



»»Gruenberg

Open Truck Bulk Sterilizer

Open Truck Bulk Style Lab Animal Science Sterilizer

The Gruenberg SteriDry™ Dry Heat Lab Animal Science Sterilizer provides the animal care market with equipment to sterilize animal habitat cages through the process of dry-heat sterilization. These sterilizers are designed and built for lab animal science applications.



Model Designation	Interior Volume (Cu. Ft.)	Interior Dimensions W x D x H in (cm)	Exterior Dimensions W x D X H in (cm)	Trucks	Cages per Truck	Total # Cages
VSTHR96.33TSS	96	34 x 68 x 72 (86.3 x 172.7 x 182.8)	50.75 x 80 x 125 (128.9 x 203.2 x 317.5)	1	260	260
VST40HR181.33PTSS	181	64 x 68 x 72 (162.5 x 172.7 x 182.8)	80.75 x 80 x 125 (205.1 x 203.2 x 317.5)	2	260	520
VST40HR363.66PTSS	362	64 x 136 x 72 (162.5 x 172.7 x 182.8)	80.75 x 155.75 x 125 (205.1 x 395.6 x 317.5)	4	260	1040

Based on cage size of 7.5" x 11" x 5"

Optional design specific equipment to meet custom throughput requirements

► Features

- Reinforced heavy-duty double doors
- Forced exhauster
- HEPA system filtration
- Modular construction
- NEMA 12 control panel
- Horizontal, reversing air circulation
- 304 L Stainless Steel Exterior with #4 polish
- 4" Fiberex insulation
- Plate steel floor
- Maximum temperature: 400°F
- Allen Bradley panelview control system

► CHIL Construction

- Separated, insulated inner and outer surfaces
- Pliable, final seal silicone rubber gaskets on oven up to 650°F
- Less energy to maintain temperature
- Air-conditioning equipment doesn't work as hard
- Heavy-duty construction
- Built around welded, structural steel frame
- One-piece unitized construction costs less to install
- Pre-tested, ready for operation
- Motor and blowers to circulate air for uniform atmosphere
- Variable-speed pulley for circulation adjustment (CFM)
- Heater elements are Inconel sheathed nichrome wire coil



»»Gruenberg

Generation II Open Truck Sterilizer

Generation II Open Truck Bulk Lab Animal Science Sterilizer

The Gruenberg SteriDry™ Dry Heat Lab Animal Science Sterilizer provides the animal care market with equipment to sterilize animal habitat cages through the process of dry-heat sterilization. These sterilizers are designed and built for lab animal science applications.

► Features and Benefits

- Green operation with lower total energy consumption
- Economical cost
- Flexible installation and customization options
- Validated sterilization cycles for assured results
- Energy efficient electrical heating system
- Easy to use controls
- PrecisionFlo™ full focused airflow
- HEPA filters
- Data acquisition capabilities
- Panelized design

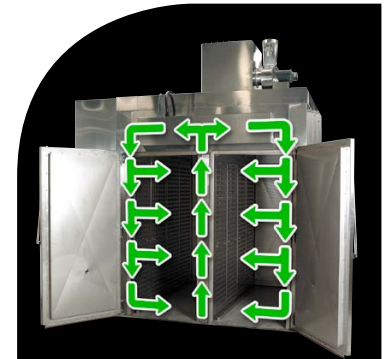


Hold the Steam

Dry heat sterilization systems use forced-air convection technology for reduced energy consumption.

Pharmaceutical, Medical Device and Life Science Research sterilization has recently seen a demand for greener technologies that require less maintenance. This puts the pressure on equipment engineers to develop innovative ways to approach sterilization. While traditional steam autoclaves use water; dry heat sterilization provides an alternative to steam that uses no water, less energy, and requires less maintenance.

Compared with steam; dry heat is a greener technology that eliminates water usage, provides more flexibility for installation locations, and costs less to own and operate.



PRECISIONFLO™
100% focused
forced-air
convection
technology.

*Patent Pending

Advantages of Dry Heat vs. Steam

	Dry Heat Sterilizer	New Steam Autoclave
Volume (Cu. Ft.)	139	139
Footprint (Sq. Ft.)	34.3	Sterilizer 48.5 / Pit 91.2
Minimum Dimension of Parts (In.)	31.5	62.4
Utilities	Electric	Steam, cold water, drain, pit, electric, compressed air
Water Usage (Gal.)	0	700
Cost per Cycle (Calculated)	Half of Autoclave	****

Measured Energy Consumption—Dry Heat

Stage	300°F Time (min)	Soak: 60 Min Power (kW)	SteriDry™ Energy (kWH)	Cost (\$)
Ramp Up	20	61	20.3	\$2.64
Soak	60	12	11.7	\$1.53
Cool	100	4	5.4	\$.83
Total	180		37.4	\$4.99

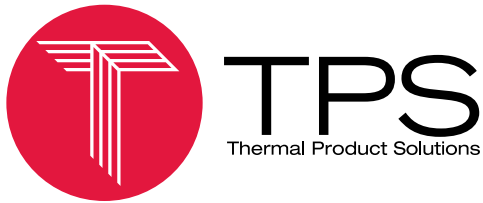


Our SteriDry™ engineers are always here to help you design and implement our standard or custom sterilizers to meet your project's specific needs, no matter how demanding.



Sterilizer Design Possibilities:

- Proof of concept and proof of process
- Development of test platforms and prototype units
- Optimizing production processes
- Pharmaceutical process research and testing
- Custom process controls to solve manufacturing challenge



»» Gruenberg

Generation II Open Truck Sterilizer

Out of Autoclave Composite Curing Oven

The flexible design of the Out Autoclave Curing Oven can cure composite materials of complex contours, shapes and sizes with little to no void content. These ovens cure advanced composite materials such as carbon fibers, ceramics, Kevlar®, Nomex®, thermoset, thermoplastic resins, epoxies, aramids, glass fibers and nano-materials. It is customizable to unique industry applications, including aerospace, sports & recreation, marine, automobile and wind/energy. Standard and custom sizes are available to fit any workspace and accommodate any application.

► Features

- Heavy-duty, fully welded structural steel frame
- Automated vacuum bagging systems
- High volume, vertical-up air circulation system
- Airflow alarm system
- CHIL construction



Mechanical Equipment:

Included on Standard Unit

- Structural steel support framework
- Pneumatically operated vertical lift doors
- High volume vertical-up airflow system
- Isolated conditioning plenum above chamber
- Four propeller circulation fans with externally mounted motors
- Natural air intake/exhaust system with 8" diameter ports
- Adjustable dampers

Available on Standard Units

- Installation and startup assistance
- Custom ports for instruments, piping, vacuum
- Custom airflow configurations
- Custom air changes per minute
- Custom chambers to prep molds or preheat raw material

Electrical Equipment:

Included on Standard Unit

- Control box
- Allen-Bradley Compact Logix Programmable Logic Controller
- High Limit Controller Yokogawa UT150L
- Ethernet connectivity plus RS-232 and USB
- Differential air pressure switch
- Sheathed heaters, Incoloy

Available on Standard Units

- Chart recorders and data acquisition modules
- Automated damping systems
- HMI controls

Airflow	Vertical-up
Operating Temp.	+350°F (176.5°C)
Max Temp.	+450°F (232°C)
Workspace	Custom
Interior & Exterior	304 Stainless Steel
Insulation	3" Fibrex
Solvent Venting	140 CFM through 4" connection
Safety Features	Airflow switches, door switch
Filtration	Class 1000 HEPA
Heating System	Seamless tubular Incolloy type
Controls	7" Allen Bradley and High Limit Controller Yokogawa UT150L or custom
Temp. Uniformity	±5 degrees C



Gruenberg, Blue M, Tenney

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Specifications and Product Information are subject to change without notice.