Vacuum Ovens

Digital 1400 Series Models: 1425 | 1445 | 1465

Model 1445

Cross-Flow Ventilation featured in all Vacuum Ovens

All SHEL LAB vacuum ovens feature a unique cross-flow ventilation design to ensure superior performance. The vacuum port is located inside the chamber on the top, left side, while the vent port is located on the bottom right side of the chamber. During vacuum operation, heavy particles and condensation from the oven interior are not pulled into the vacuum pump. More importantly, nitrogen or other inert gas is forced across the greatest distance inside the oven chamber, passing over your samples and purging the chamber. Corrosion-resistant stainless steel tubing is used for the gas purge piping system.

Features/Benefits:

- Cross-flow ventilation for extended applications
- True solid brass valves with Teflon seats to prevent leaks and extend longevity
- Stainless steel chambers provide durable construction and corrosion resistance
- Double plenum design allows for cool outer surface
- Easily interchangeable door gaskets
- Microprocessor controlled for precise temperature stability
- Selection of gaskets available for special applications (see chart Page 15)

Applications:

- Vacuum Drying and Curing
- Moisture Determination
- Out-gassing Solids and Liquids
- Aging Tests
- Electronic Process Control
- Vacuum Embedding
- Vacuum Storage
- Plating

Sheldon Mfg. Inc. has been an innovator with our vacuum oven lines being the first to bring square vacuum ovens to the industry. Vacuum ovens are used for a variety of applications such as drying, curing and moisture content testing.

Cool Outer Surface. Our double plenum design exceeds CE safety requirements.

Introduced Gas Saturates Chamber Uniformly. Our unique cross-flow ventilation forces inert gas to fill the entire chamber.

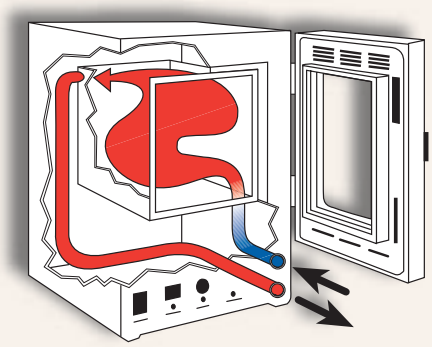
Maintains Precise Temperature. Our PID controller, combined with appropriately sized heating elements, maintains precise temperature stability with no overshoot.

Won't Overheat. Our independent overtemperature protection (OTP) control maintains chamber temperature in the event of a main control malfunction.

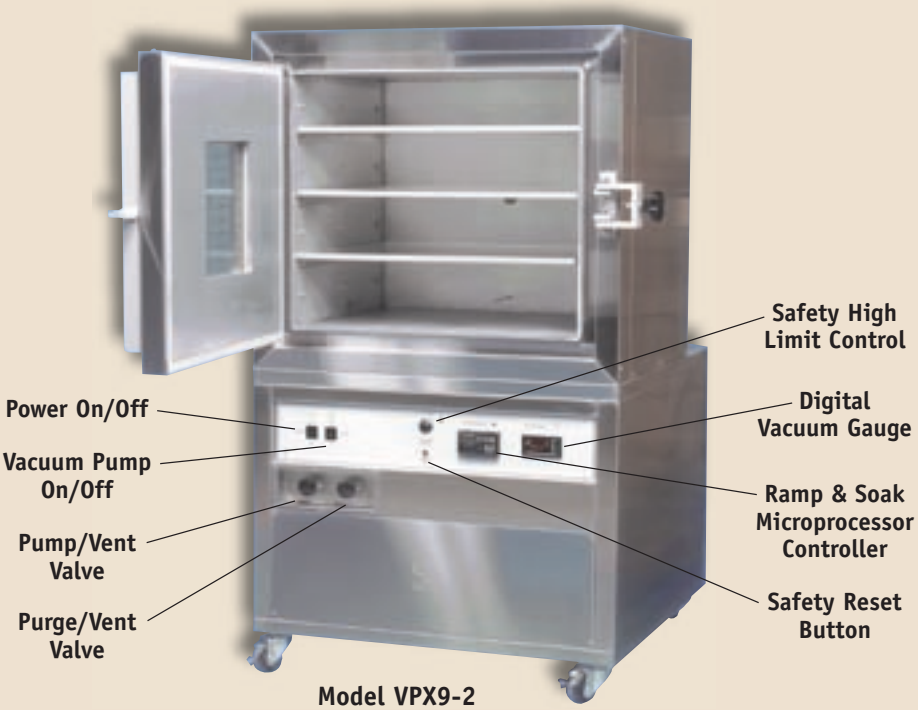
SHEL LAB Innovation. All of our vacuum ovens are built with a stainless steel chamber for exceptional durability. We use true brass vacuum valves built with 3/8" orifices to withstand heavy use and minimize downtime. The doors have positive latch handles with spring loaded glass to facilitate optimal vacuum seal without leaks. A selection of gaskets (for specific applications) and a small footprint increase the versatility of our ovens.

Vacuum Oven Station

Model: VPX9-2



Inert Gas Flow Diagram



Model VPX9-2

Unique Design. The Model VPX9-2 is a general purpose vacuum oven specially designed for professional and industrial use. The combination of the oven and a ruggedly constructed mobile stand creates an ideal vacuum application station. The stand is designed for mounting a vacuum pump at the base. All vacuum plumbing and KF25 connections are provided (vacuum pump not included).

Precision Controllers. The Watlow 981 temperature controller, programmable and microprocessor based, offers multiple ramp and soak capabilities, including storing and running up to 24 temperature profiles. A secondary independent high limit temperature controller provides overtemperature protection (OTP). The VPX9-2 is one of the largest capacity vacuum ovens commercially available. Controls are easily adjustable and feature a user-friendly interface. A digital vacuum gauge shows chamber vacuum level in measurements of Torr and m/Torr.

Rugged Construction. High grade stainless steel construction is used for the exterior and chamber interior. Vacuum valves incorporate 3/8" brass orifices to withstand heavy use.

Introduced Gas Saturates Chamber Uniformly. Our unique cross-flow ventilation design forces nitrogen or other inert gases to fill the entire chamber. Gas is forced across the greatest distance of the chamber, purging the chamber as it passes over the samples. Corrosion-resistant stainless steel tubing is used for the gas purge piping system. Use this feature to reduce effects of oxidation.

Features/Benefits

- Large capacity is efficient and accommodating
- All stainless steel construction
- Programmable Controller
- Digital Vacuum Gauge for accuracy
- Cross-flow ventilation allows for a dry oxygen free environment.
- System ready to receive vacuum pump

Applications

- Electronic Process Control
- Vacuum Drying and Curing
- Moisture Determination
- Aging Tests
- Vacuum Embedding
- Vacuum Storage and Plating

SHEL LAB OVEN SPECIFICATIONS

Specialty Ovens Model	CR1-2* pg. 4	HF2-2* pg. 4	HF4-2* pg. 5
System Type	Class 100 Cleanroom Mechanical Convection	Inert Atmosphere Cleanroom Mechanical Convection	High Performance Mechanical Convection
Controls/Display	24-Step Programmable	24-Step Programmable	24-Step Programmable
Chamber Capacity (Cubic Feet) (Liters)	3.7 cu. ft. 105 lit.	4.4 cu. ft. 124.6 lit.	4.4 cu. ft. 124.6 lit.
Temperature Range	Amb. +15 to 250°C	Amb. +15 to 300°C	Amb. +15 to 300°C
Temperature Uniformity	± 1.0°C at 110°C	± 1.0°C at 110°C	± 1.0°C at 110°C
High Limit Control	Yes	Yes	Yes
Heat-up time to 180°C (in minutes)	31 min.	20 min.	20 min.
Recovery time to 110°C (in minutes)	4 min.	4 min.	4 min.
Timer	Yes	Yes	Yes
External Dimensions in inches (wdh) (cm)	35 x 29 x 38" 89 x 73.7 x 96.5	35 x 29 x 38" 89 x 73.7 x 96.5	35 x 29 x 38" 89 x 73.7 x 96.5
Internal Dimensions in inches (wdh) (cm)	17 x 20.125 x 20.125" 43.2 x 51 x 51	17 x 20.125 x 20.125" 43.2 x 51 x 51	17 x 20.125 x 20.125" 43.2 x 51 x 51
Shelves Supplied	2 Shelves	2 Shelves	2 Shelves
Maximum Shelves	8 Shelves	8 Shelves	8 Shelves
Shipping Weight in pounds (kilograms)	250 lbs. 113.4 kgs.	240 lbs. 109 kgs.	240 lbs. 109 kgs.
Certifications	UL, CE	UL, CE	UL, CE
Element Wattage	2200	2200	2200
Electrical Requirements			
Max. Amp draw at 120Vac	N/A	N/A	N/A
Max. Amp draw at 220Vac	10	12	12
Power Frequency/Phase	50-60 Hz/Single Phase	50-60 Hz/Single Phase	50-60 Hz/Single Phase

*-2 denotes 220V. NOTE: HEPA filter may be weakened if oven is operated above 200°C.

Humidity/Env. Test Chambers Model	HC5 HC5-2* pg. 7	HC5R HC5R-2* pg. 7	HC9 HC9-2* pg. 7	HC9R HC9R-2* pg. 7
System Type	Humidity Test Cabinet	Humidity Test Cabinet	Humidity Test Cabinet	Humidity Test Cabinet
Controls/Display	Single Setpoint mProc.	Single Setpoint mProc.	Single Setpoint mProc.	Single Setpoint mProc.
Jacket Type	Water Jacket	Water Jacket	Air Jacket	Air Jacket
Chamber Capacity (Cubic Feet) (Liters)	5 cu. ft. 141.5 lit.	5 cu. ft. 141.5 lit.	10 cu. ft. 283.3 lit.	10 cu. ft. 283.3 lit.
Temperature Range	Amb. +15 to 70°C	10° to 70°C	Amb. +15 to 70°C	10° to 70°C
Temperature Uniformity	± 0.35°C at 37°C	± 0.35°C at 37°C	± 0.5°C at 37°C	± 0.5°C at 37°C
RH Control Range	Amb. +10 to 95% at 25°C	Amb. +10 to 95% at 25°C	Amb. +10 to 95% at 25°C	Amb. +10 to 95% at 25°C
External Dimensions in inches (wdh) (cm)	25 x 26.25 x 46.25" 63.5 x 66.76 x 117.5	25 x 26.25 x 46.25" 63.5 x 66.7 x 117.5	44 x 29 x 60" 111.8 x 73.7 x 152.4	44 x 29 x 60" 111.8 x 73.7 x 152.4
Internal Dimensions in inches (wdh) (cm)	19.5 x 18.5 x 24.25" 49.5 x 47 x 61.6	19.5 x 18.5 x 24.25" 49.5 x 47 x 61.6	30 x 20 x 30" 76.2 x 50.8 x 76.2	30 x 20 x 30" 76.2 x 50.8 x 76.2
Shelves Supplied	6 Shelves	6 Shelves	3 Shelves	3 Shelves
Maximum Shelves	12 Shelves	12 Shelves	8 Shelves	8 Shelves
Shipping Weight in pounds (kilograms)	410 lbs. 186 kgs.	425 lbs. 193 kgs.	640 lbs. 290 kgs.	660 lbs. 299 kgs.
Certifications	UL, CE	UL, CE	UL, CE	UL, CE
Electrical Requirements				
Max. Watts at 120Vac	1200	1920	1560	1920
Max. Watts at 220Vac	990	1870	1430	1870
Max. Amp draw at 120Vac	10	16	13	14
Max. Amp draw at 220Vac	4.5	8.5	6.5	8.5
Power Frequency/Phase	50-60 Hz/Single Phase	50-60 Hz/Single Phase	50-60 Hz/Single Phase	50-60 Hz/Single Phase

*-2 denotes 220V, R = Refrigerated. NOTE: Use distilled water only. Operating specifications may vary depending on ambient conditions.

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High Performance Model	HF10-2* pg. 6	HF15-2* pg. 6	HF25-2* pg. 6	HF37-2* pg. 6
System Type	Horizontal Forced Air Mechanical Convection	Horizontal Forced Air Mechanical Convection	Horizontal Forced Air Mechanical Convection	Horizontal Forced Air Mechanical Convection
Controls/Display	24-Step Programmable	24-Step Programmable	24-Step Programmable	24-Step Programmable
Chamber Capacity (Cubic Feet) (Liters)	10 cu. ft. 305 lit.	13.8 cu. ft. 392 lit.	28 cu. ft. 972 lit.	33 cu. ft. 934 lit.
Temperature Range	Amb. +15 to 260°C	Amb. +15 to 260°C	Amb. +15 to 260°C	Amb. +15 to 260°C
Temperature Uniformity	± 1.5°C at 110°C	± 1.5°C at 110°C	± 1.5°C at 110°C	± 2°C at 110°C
High Limit Control	Yes	Yes	Yes	Yes
Heat-up time to 180°C (in minutes)	18 min.	22 min.	20 min.	28 min.
Recovery time to 180°C (in minutes)	5 min.	10 min.	8 min.	15 min.
Recovery time to 110°C (in minutes)	4 min.	6 min.	4 min.	12 min.
Timer	Yes	Yes	Yes	Yes
External Dimensions in inches (wdh) (cm)	44 x 28.25 x 55" 112 x 72 x 142	54.5 x 28 x 55.625" 138 x 71 x 141	42.5 x 33.375 x 84.75" 108 x 85 x 215	68 x 33.125 x 78.375" 173 x 84 x 199
Internal Dimensions in inches (wdh) (cm)	30 x 19.75 x 30.187" 76 x 50 x 77	20.125 x 19.75 x 30.187" 51 x 50 x 77	31.625 x 26 x 61" 80 x 63.5 x 155	21.875 x 24 x 54.25" 56 x 61 x 138
Shelves Supplied	3 Shelves	6 Shelves	6 Shelves	12 Shelves
Maximum Shelves	6 Shelves	12 Shelves	12 Shelves	24 Shelves
Shipping Weight in pounds (kilograms)	435 lbs. 198 kgs.	545 lbs. 247 kgs.	660 lbs. 300 kgs.	980 lbs. 445 kgs.
Certifications	N/A	N/A	N/A	N/A
Element Wattage	5500	5500	11000	11000
Electrical Requirements Max. Amp draw at 120Vac Max. Amp draw at 220Vac Power Frequency/Phase	 N/A 26 50-60 Hz/Single Phase	 N/A 26 50-60 Hz/Single Phase	 N/A 50 50-60 Hz/Single Phase	 N/A 50 50-60 Hz/Single Phase

*-2 denotes 220V

	HC30 HC30-2* pg. 7	HC30R HC30R-2* pg. 7
	Humidity Test Cabinet	Humidity Test Cabinet
	Single Setpoint mProc.	Single Setpoint mProc.
	Air Jacket	Air Jacket
	30 cu. ft. 850 lit.	30 cu. ft. 850 Lit.
	Amb. +15 to 70°C	10° to 70°C
	± 0.5°C at 37°C	± 0.5°C at 37°C
	Amb. +10 to 95% at 25°C	Amb. +10 to 95% at 25°C
	43 x 35 x 85" 109 x 89 x 216	43 x 35 x 85" 109 x 89 x 216
	31 x 27.5 x 61.5" 78.7 x 69.8 x 156.2	31 x 27.5 x 61.5" 78.7 x 69.8 x 156.2
	6 Shelves	6 Shelves
	16 Shelves	16 Shelves
	660 lbs. 299 kgs.	680 lbs. 309 kgs.
	UL, CE	UL, CE
	 1440 1430 12 6.5 50-60 Hz/Single Phase	 1680 16500 14 7.5 50-60 Hz/Single Phase

Model HC5

Manufacturer reserves the right to change/modify product specifications. Operations at 208V can affect performance. Please contact manufacturer for details.

General Purpose Model	CE3F CE3F-2* pg. 8	CE5F CE5F-2* pg. 8	CE3G CE3G-2* pg. 8	CE5G CE5G-2* pg. 8
System Type	Mechanical Convection	Mechanical Convection	Gravity Convection	Gravity Convection
Controls/Display	Single Setpoint mProc.	Single Setpoint mProc.	Single Setpoint mProc.	Single Setpoint mProc.
Chamber Capacity (Cubic Feet) (Liters)	3 cu. ft. 85 lit.	5 cu. ft. 142 lit.	3.4 cu. ft. 96 lit.	5.4 cu. ft. 153 lit.
Temperature Range	Amb. +15 to 240°C	Amb. +15 to 240°C	Amb. +15 to 240°C	Amb. +15 to 240°C
Temperature Uniformity	± 1.5°C at 110°C	± 1.5°C at 110°C	± 2°C at 110°C	± 2°C at 110°C
High Limit Control	Yes	Yes	Yes	Yes
External Dimensions in inches (wdh) (cm)	25 x 26.8 x 33.5" 64.8 x 68 x 85	30 x 26.8 x 38" 76.2 x 68 x 96.5	25.5 x 26.8 x 33.5" 64.8 x 68 x 85	30 x 26.8 x 38" 76.2 x 68 x 96.5
Internal Dimensions in inches (wdh) (cm)	16.5 x 19.5 x 16.5" 42 x 49.5 x 42	21 x 19.5 x 21" 53.3 x 49.5 x 53.3	16.5 x 19.5 x 16.5" 42 x 49.5 x 42	21 x 19.5 x 21" 53.3 x 49.5 x 53.3
Shelves Supplied	2 Shelves	2 Shelves	2 Shelves	2 Shelves
Maximum Shelves	8 Shelves	8 Shelves	8 Shelves	8 Shelves
Shipping Weight in pounds (kilograms)	170 lbs. 77 kgs.	258 lbs. 117 kgs.	160 lbs. 72.5 kgs.	248 lbs. 112 kgs.
Certifications	UL, CE (220Vac only)	UL, CE (220Vac only)	UL, CE (220Vac only)	UL, CE (220Vac only)
Element Wattage	1100	1500	1100	1500
Electrical Requirements Max. Amp draw at 120Vac Max. Amp draw at 220Vac Power Frequency/Phase	 10 5 50-60 Hz/Single Phase	 13 7 50-60 Hz/Single Phase	 10 5 50-60 Hz/Single Phase	 13 7 50-60 Hz/Single Phase

*-2 denotes 220V

Vacuum Ovens Model	1425 1425-2* pg. 10	1445 1445-2* pg. 10	1465 1465-2* pg. 10
System Type	Vacuum Oven	Vacuum Oven	Vacuum Oven
Controls/Display	Digital mProc.	Digital mProc.	Digital mProc.
Chamber Capacity (Cubic Feet) (Liters)	0.6 cu. ft. 16 lit.	1.7 cu. ft. 47 lit.	4.5 cu. ft. 127.5 lit.
Temperature Range	Amb. +15 to 240°C	Amb. +15 to 240°C	Amb. +15 to 240°C
Temperature Uniformity	± 3.5% of Setpoint	± 3.5% of Setpoint	± 3.5% of Setpoint
High Limit Control	Yes-Independent	Yes-Independent	Yes-Independent
External Dimensions in inches (wdh) (cm)	23 x 19 x 17" 58.4 x 48.3 x 43.2	26 x 27 x 20" 66 x 68.6 x 50.8	32 x 31 x 26" 81.3 x 78.7 x 66
Internal Dimensions in inches (wdh) (cm)	9 x 12 x 9" 23 x 30.5 x 23	12 x 20 x 12" 30.5 x 50.8 x 30.5	18 x 24 x 18" 45.7 x 61 x 45.7
Vacuum Gauge	Analog	Analog	Analog
Standard Gasket Material	Silicon	Silicon	Silicon
Shelves Supplied	3 Shelves - Aluminum	3 Shelves - Aluminum	3 Shelves - Aluminum
Maximum Shelves	3 Shelves	3 Shelves	3 Shelves
Shipping Weight in pounds (kilograms)	145 lbs. 65.8 kgs.	250 lbs. 113.4 kgs.	450 lbs. 204 kgs.
Certifications	UL, CE	UL, CE	UL, CE
Electrical Requirements Max. Watts at 120Vac Max. Watts at 220Vac Max. Amp draw at 120Vac Max. Amp draw at 220Vac Power Frequency/Phase	 750 750 7.0 3.5 50-60 Hz/Single Phase	 1150 1150 10.0 5.25 50-60 Hz/Single Phase	 1500 1500 13 7 50-60 Hz/Single Phase

*-2 denotes 220V

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General Purpose Model	pg. 9 FX14-2*	pg. 9 FX28-2*
System Type	Mechanical Convection	Mechanical Convection
Controls/Display	Single Setpoint mProc.	Single Setpoint mProc.
Chamber Capacity (Cubic Feet) (Liters)	13.6 cu. ft. 385 lit.	28 cu. ft. 793 lit.
Temperature Range	Amb. +15 to 200°C	Amb. +5 to 200°C
Temperature Uniformity	± 3°C at 110°C	± 3°C at 110°C
High Limit Control	Yes	Yes
External Dimensions in inches (wdh) (cm)	37 x 34 x 47″ 94 x 86.4 x 119.4	37 x 34 x 78.5″ 94 x 86.4 x 200
Internal Dimensions in inches (wdh) (cm)	31 x 25 x 31″ 78.74 x 63.5 x 78.74	31 x 25 x 62″ 78.74 x 63.5 x 147.48
Shelves Supplied	3 Shelves	6 Shelves
Maximum Shelves	8 Shelves	16 Shelves
Shipping Weight in pounds (kilograms)	340 154	450 204
Certifications	N/A	N/A
Element Wattage	2000	4000
Electrical Requirements Max. Amp draw at 120Vac Max. Amp draw at 220Vac Power Frequency/Phase	 N/A 10 50-60 Hz/Single Phase	 N/A 19 50-60 Hz/Single Phase

*-2 denotes 220V

Vacuum Oven Station Model	pg. 11 VPX9-2*
System Type	Vacuum Oven Station
Controls/Display	Digital mProc.
Chamber Capacity (Cubic Feet) (Liters)	9.0 cu. ft. 255 lit.
Temperature Range	Amb. +15 to 220°C
Temperature Uniformity	± 3.5% of Setpoint
High Limit Control	Yes-Independent
External Dimensions in inches (wdh) (cm)	36.25 x 45 x 62″ 92 x 114.3 x 157.5
Internal Dimensions in inches (wdh) (cm)	28 x 24 x 24″ 71 x 61 x 61
Vacuum Gauge	Digital-m/Torr Scale
Standard Gasket Material	Viton
Shelves Supplied	3 Aluminum
Maximum Shelves	3 Shelves
Shipping Weight in pounds (kilograms)	980 lbs. 445 kgs.
Certifications	N/A
Element Wattage	3500
Electrical Requirements Max. Amp draw at 120Vac Max. Amp draw at 220Vac Power Frequency/Phase	 N/A 16 50-60 Hz/Single Phase

*-2 denotes 220V

Vacuum Oven Optional Gasket Chart

Application	Max Temp	Gasket	Model	Part #
General & High Temp	300°C	Black Silicone	1425	100029
General & High Temp	300°C	Black Silicone	1445	100037
General & High Temp	300°C	Black Silicone	1465	310028
Acidic	250°C	FlouroSilicone	1425	3450610
Acidic	250°C	FlouroSilicone	1445	3450611
Acidic	250°C	FlouroSilicone	1465	3450612
Solvent	150°C	Buna Gaskets	1425	100049
Solvent	150°C	Buna Gaskets	1445	100038
Solvent	150°C	Buna Gaskets	1465	891054

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