Vacucell

Vacuum Drying Ovens

Patented Servotherm Direct Heat Transfer System

BMT USA

MMM Group

22 / 0.8ft³   **55** / 2ft³   **111** / 4ft³

Temperature:

ECO: Ambient +5°C up to 200°C
EVO: Ambient +5°C up to 300°C

Maximum Reachable Vacuum:

5×10^{-4} mbar / 0.0005 mbar / 0.000375 Torr / 0.00001 inHg

Chamber:

AISI 316 stainless steel, pressure resistant.

Safety Doors:

- 2cm Ventiflex safety glass in the door releases in the event of over-pressure to prevent possible combustion.
- 4-point patented door locks for secure door seal.

Additional Features:

- Inert gas or air connection.
- Needle valve for fine dosing.
- Integrated 40mm port.
- Connecting kit DN mm (ISO KF) 16.
- (2) Aluminum shelves included (optional stainless steel).

Electrical:

115V 50/60Hz

Optional Equipment:

- Stainless steel exterior: AISI 304 or 316.
- ECO plus: add 6 program segments for 8 total segments and 9 programs.
- Vacuum pump specific to user application.
- Vacustation for housing the vacuum pump.
- Ethernet communication port.
- Flexible PT 100 temperature probe.
- Door sensor and alarm.
- Interior electrical socket: 115V.
- BMS contacts (24V, 1A).
- 4-20mA contacts.
- IQ/OQ protocols with 9pt. or 27pt. temperature mapping.
- Warmcomm software:
    - 4.0B - data monitoring.
    - 4.0P - data monitoring and control.
    - 4.0F - FDA 21 CFR part 11 compliance.

Vaucell vacuum drying ovens are an ideal solution for drying temperature sensitive, easily decomposable, or oxidative materials under careful vacuum. Additional applications include drying-off solvents from chemicals and powders, quality and durability testing of components and materials, and drying complex components with inaccessible cavaties.

The patented Servotherm direct heat transfer system conducts heat from the shelf to the sample for fast, safe and effective drying. The Vacucell can be connected to a central vacuum source or equipped with a BMT Vacustation to house a dedicated vacuum pump for a complete stand-alone solution.

Key Benefits:

- Fast drying of samples and solvents under gentle vacuum.
- Pressure-resistant, pharmaceutical-grade AISI 316 stainless steel chamber.
- Deep vacuum @ 5×10^{-4} mbar with chamber leakage $< 5 \times 10^{-3}$ mbar.l.s^{-1}
- Built-in safety features protect laboratory staff and the load.

ECO Controller:

- 3" LCD display.
- Analog vacuum presssure display.
- Fuzzy Logic algorithm constantly monitors chamber conditions and continuously optimizes parameters.
- (9) programs with (2) segments each for varying loads and parameters.
- Real-time programming and cycling.
- Programmable audible & visual alarms – temperature and time.
- USB flash & device, RS232 & optional Ethernet port.
- Integrated USB 30-day data logger for temperature measurement & recording.
- Keypad lock against unauthorized access.
- Optional FDA CFR 21 part 11 compliance.

EVO Controller:

- 5.7" LCD touch display.
- Digital vacuum pressure display.
- Fuzzy Logic algorithm constantly monitors chamber conditions and continuously optimizes parameters.
- (100) programs with (100) segments each for varying loads and parameters.
- Real-time programming and cycling with settings for temperature ramping.
- Fan adjustments in 1% increments.
- Programmable audible & visual alarms – temperature, time & humidity.
- Service programs for quick error diagnostics.
- USB device, RS232 & optional Ethernet port.
- Integrated SD card 30-day data logger & multi-level secure user authentication.
- Optional FDA CFR 21 part 11 compliance.

Vacucell Technical Data		Model	22	55	111
Interior Dimensions **Chamber:** AISI 304 stainless steel *(AISI 316 stainless steel option available)*	Volume	ft³	0.8	2	4
		liters	22	55	111
	Width	inches	13.4	15.7	21.3
		mm	340	400	540
	Depth	inches	10.2	12.6	16.1
		mm	260	320	410
	Height	inches	11.8	16.9	18.9
		mm	300	430	480
Exterior Dimensions (Including door and handle)	Width	inches	22.1	24.4	29.9
		mm	560	620	760
	Depth	inches	19.7	22.1	25.6
		mm	500	560	650
	Height	inches	30.7	35.8	37.8
		mm	780	910	960
Vacuum Connection	Vacuum Connection	DN mm	16	16	16
	Measuring Port	DN mm	40	40	40
	Max. Attainable Vacuum	mbar	5×10^{-4}	5×10^{-4}	5×10^{-4}
	Chamber Leakage	mbar.l.s⁻¹	$<5 \times 10^{-3}$	$<5 \times 10^{-3}$	$<5 \times 10^{-3}$
Inert Gas or Air Connection	Needle Valve (ECO)	Ø mm	8	8	8
	Programmable Filling (EVO)	Ø mm	8	8	8
Shelves: Stainless Steel	Capacity: # of shelf guides in chamber side walls	maximum #	5	8	9
		# included	2	2	2
Shelf Distance	Min. distance between trays	inches	1.41	1.7	1.7
		mm	36	43	43
Useable Shelf Area	Width x Depth	inches	11x9.3	13.4x11.7	18.9x15.2
		mm	280x236	340x296	480x386
Maximum Shelf Load	Per shelf	lbs	44.1	55.1	55.1
		kg	20	25	25
	Total Per Unit	lbs	77.2	99.2	143.3
		kg	35	45	65
Doors		No.	1	1	1
Working Temperature	From 5°C above ambient	up to °C	200 / 300	200 / 300	200 / 300
Temperature Deviation from Working Temperature with Aluminum Shelves (Pressure 5–10 mbar)	Temperature Distribution @ 100°C	± °C	2	2	3
	Temperature Distribution @200°C	± °C	5	6	7
	Uniformity	± °C	0.4	0.4	0.4
Temperature Deviation from Working Temperature with Stainless Steel Shelves (Pressure 5–10 mbar)	Temperature Distribution @ 100°C	± °C	10	10	11
	Temperature Distribution @200°C	± °C	18	23	26
	Uniformity	± °C	0.5	1	1
Time to Reach Temperature with Aluminum Shelves & 230V Power	Up to 100°C	min	60	65	110
	Up to 200°C	min	80	85	130
Time to Reach Temperature with Stainless Steel Shelves & 230V Power	Up to 100°C	min	130	140	170
	Up to 200°C	min	170	180	220
Heat Emissions	@ 100°C	W	150	260	370
	@200°C	W	300	520	750
Noise Level of Complete Device		dB	0	0	0
Electrical Data (230V Option)	Max Consumption 50/60Hz	kW	0.8	1.2	1.8
		W	805	1208	1806
		A	7	10.5	15.7
		V	115	115	115
IP Code			IP20	IP20	IP20
Weight	Net	lbs	143.3 / 149.9	216.1 / 222.6	286.6 / 293.2
		kg	65 / 68	98 / 101	130 / 133
	Gross	lbs	167.5 / 200.6	244.7 / 410.1	319.7 / 480.6
		kg	76 / 91	111 / 186	145 / 218

*ECO Value / EVO Value