



SHEL LAB®

SMO Series

Mechanical Convection Ovens

**SMO1 • SMO3 • SMO5 • SMO14-2 •
SMO28-2**

Rapid Heat-Up Time to 306°C



SHEL LAB is a Sheldon Manufacturing Brand. P/N 0740555 & 0740631. Rev. 2024

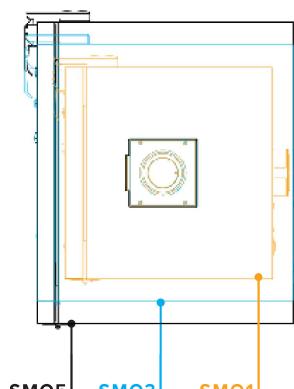
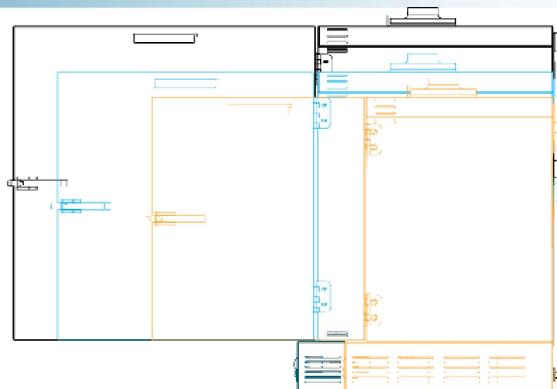
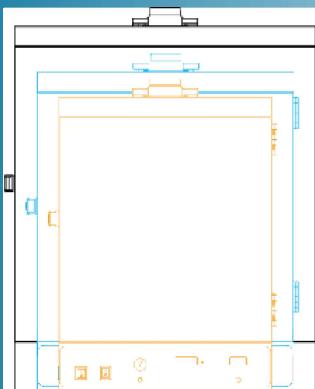
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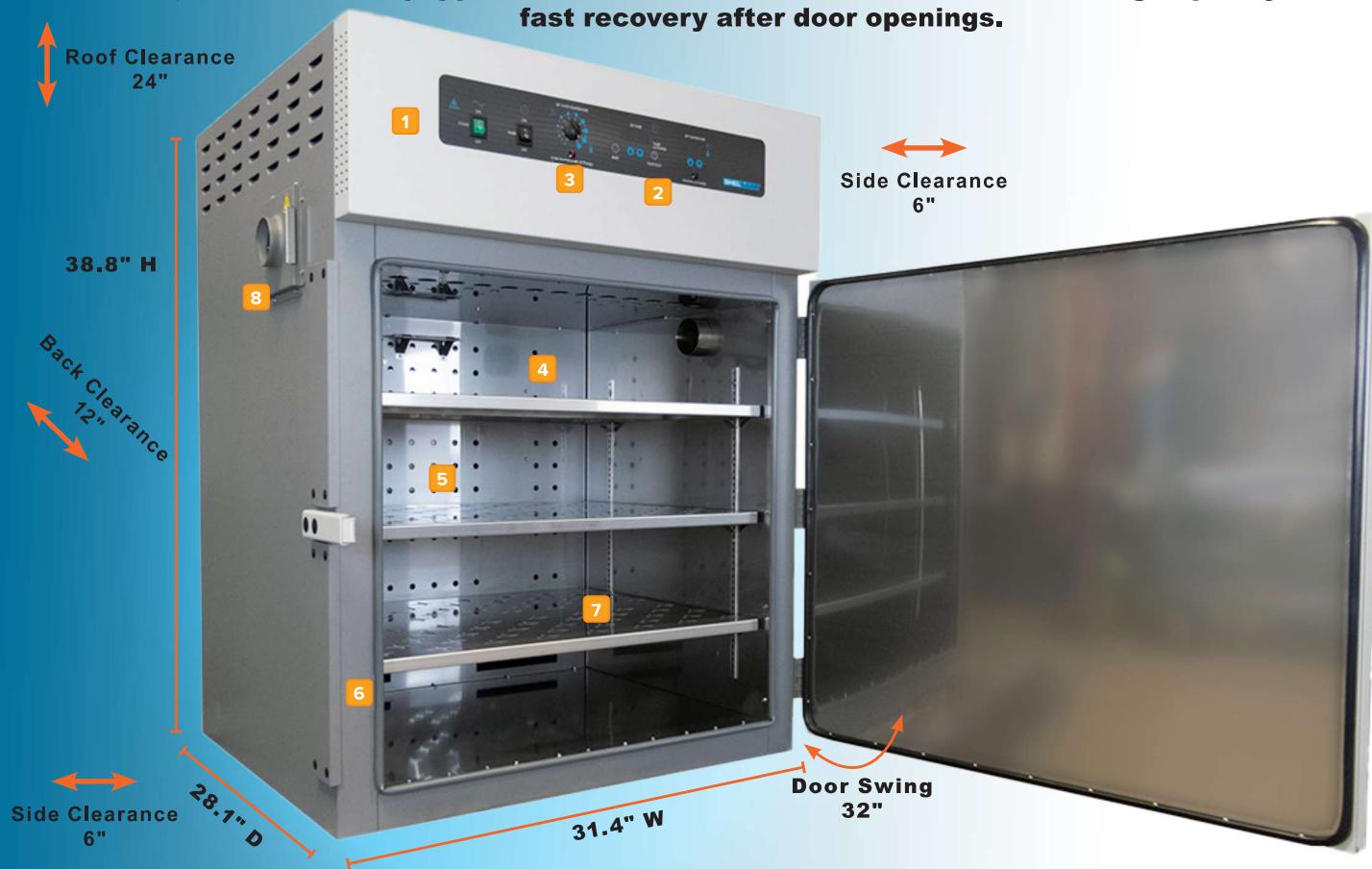
- ⊕ Fast ramp-up to 306°C for faster cycle times.
- ⊕ Temperature range approximately 20°C above ambient to 306°C for multiple applications.
- ⊕ Advanced PID temperature control system for sensitive response.
- ⊕ Built-in digital timer for automatic operation following manual start.
- ⊕ Independent overtemperature setpoint and operational control override for additional safety.

- ④ Stainless steel interior construction for long life operation, easy cleaning.
- ⑤ Forced-air circulation to assure maximum temperature uniformity.
- ⑥ Triple-wall construction to minimize external surface temperature.
- ⑦ Stainless steel shelves are adjustable on 0.5" (12.7 mm) centers to provide flexible inventory options.
- ⑧ Rear access port, 1.75" diameter (44 mm) for independent cables, instrumentation.

- ⑨ Exhaust port, 3.0" diameter (76 mm), adjustable, with external connection to customer-supplied vent for effluent exhaust if required.
- ⊕ Internationally certified CAN/CSA, UL, EN, IEC 61010, and compliant with CE.



SHEL LAB SMO Series laboratory ovens are ideal for precise scientific and analytical applications in laboratories and pilot plant research. Common uses include aging, curing, drying, baking, pre-heating, conditioning, and life cycle testing. Available in three cabinet sizes, each oven is equipped with forced-air circulation and extra heating capacity to ensure fast recovery after door openings.



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- Temperature range approximately 20°C above ambient to 306°C for multiple applications.
- Advanced PID temperature control system for sensitive response.
- Built-in digital timer for automatic operation following manual start.
- Independent overtemperature setpoint and operational control override for additional safety.
- Stainless steel interior construction for long life operation, easy cleaning.
- Forced-air circulation to assure maximum temperature uniformity.
- Triple-wall construction to minimize external surface temperature.
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- Internationally certified CAN/CSA, UL, EN, IEC 61010, and compliant with CE.

Accessories	SMO1	SMO3	SMO5	SMO14	SMO28-2
Caster Platform	N/A	9000597	9000594	9000596	9000596
Sliding Shelf Option Includes 1 Shelf, 2 Slides	9751371	9751370	9751366	9751368	9751368
Shelf with Clips	N/A	N/A	N/A	9751244	9751244
Extra Shelf, Standard, Max. Weight 50 lb (22kg); Includes Brackets	9751227	9751228	9751229	N/A	N/A
Extra Shelf, Standard, Max. Weight 75 lb (34kg); Includes Brackets					

Options must be specified when ordering. Contact SHEL LAB for additional information.

SHEL LAB SMO Series ovens are available in 110-120V, 50/60Hz or 220-240V, 50/60Hz configurations and achieve temperatures up to 306°C with fast ramp-up and recovery times.

Heat-Up Rapid heat-up times to 306°C depend on voltage selected. Published heat-up performance is based on a standard cabinet under controlled testing at a 20°C ambient temperature, line voltage $\pm 10\%$ of specified voltage.

Recovery Upper vents are closed when recovery times following door openings are tested. Published recovery performance is based on a standard cabinet under controlled testing at a (22 ± 3)°C ambient temperature, line voltage $\pm 10\%$ of specified voltage.

Applications:

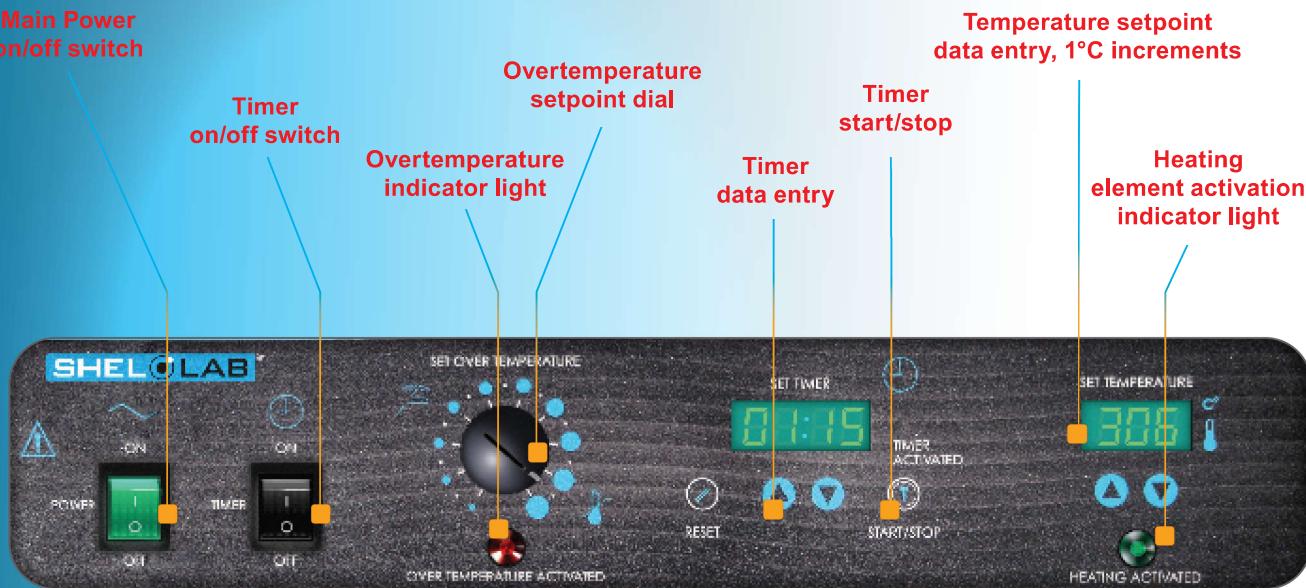
- Asphalt Testing
- ASTM, UL and Life Testing
- Baking, Conditioning, Curing
- Moisture and Stability Testing
- Drying
- Burn-In
- Aging



Control, Timer Program, and Monitoring

The advanced loop PID (proportional, integral, derivative) controller commands proportional power to the heating element to provide the most accurate and responsive control. Each controller is matched to the oven size to assure faster response to setpoint without overshoot, and quicker recovery following door openings. The

on-board timer permits programmed dwell cycles with automatic shut-off for custom applications. Indicator lights are included for visual status feedback on critical functions. All controls are centrally located on the main panel including manual power and timer on/off switches, independent overtemperature control, digital temperature and timer setpoint adjustments, and indicator lights for all functions.




Order Model Number, Voltage Specific
SMO1 SMO1-2 SMO3 SMO3-2 SM05 SMO5-2
Electrical, 50/60Hz, AC, 1Ø

Voltage	110V-120V	220V-240V	110V-120V	220V-240V	110V-120V	220V-240V
Full Load Amps	12	8	14	10	14	10
Nominal Power (watts @150°C)	650	650	675	675	700	725
Plug Supplied	NEMA 5-15P	EU 6-15P*	NEMA 5-15P	EU1-16P	NEMA 5-15P	EU1-16P

Energy Consumption (kWh/day)

At 80°C	6.5	5.7	7.2	6.5	7.5	6.7
At 150°C	12.4	11.8	13.1	12.2	13.5	12.7
At 306°C	19.8	18.8	23.5	22.1	23.8	22.7

Temperature Range 20°C above ambient to 306°C

Heat-Up to Ambient — Minutes to 80°C	8	8	6	6	9	6
Heat-Up to Ambient — Minutes to 150°C	20	20	27	15	28	28
Heat-Up to °C Ambient — Minutes to 306°C	52	52	124	57	130	80
Recovery after Door Opening (30 sec.) — Minutes to 80°C	1.5	2.5	1.5	1	2	2
Recovery after Door Opening (30 sec.) — Minutes to 150°C	4.5	3.5	2	1.5	4	3
Recovery after Door Opening (30 sec.) — Minutes to 306°C	14	7	18	5.5	45	20
Recovery after Door Opening (60 sec.) — Minutes to 80°C	4	3	2	2	3.5	3
Recovery after Door Opening (60 sec.) — Minutes to 150°C	6	4.5	4.5	3.5	6	5.5
Recovery after Door Opening (60 sec.) — Minutes to 306°C	20	9	36	11	57	26

Temperature Uniformity

At 80°C	1.00°C	0.75°C	1.00°C	0.75°C	0.75°C	0.75°C
At 150°C	2.30°C	1.80°C	1.80°C	2.50°C	1.80°C	1.50°C
At 306°C	4.70°C	4.00°C	5.00°C	5.00°C	4.50°C	3.50°C

Ventilation

Air Changes Per Hr at Max	330	330	225	225	180	180
Max CFM	5.6	5.6	11.3	11.3	15.2	15.2
Velocity	125	125	140	140	145	145
Interior Volume, Nominal	1.4 cu.ft. (39.4 liters)		3 cu.ft. (85.0 liters)		4.9 cu.ft. (138.0 liters)	
Interior Dimensions W x D x H	12.1" x 13.7" x 14.5" 307 x 349 x 368 mm		16.5" x 19.5" x 16.2" 419 x 495 x 412 mm		21.0" x 19.4" x 20.7" 533 x 494 x 527 mm	
Exterior Dimensions W x D x H	22.7" x 23.5" x 31.5" 577 x 596 x 800 mm		26.9" x 28.6" x 34.0" 684 x 727 x 840 mm		31.4" x 28.1" x 38.8" 798 x 714 x 986 mm	
Interior Construction	430 series stainless steel		400 series stainless steel		400 series stainless steel	
Exterior Construction	Painted Cold Roll Steel		Painted Cold Roll Steel		Painted Cold Roll Steel	
Shelves (See Accessories)*	2 standard, 6 total		2 standard, 7 total		2 standard, 9 total	
Maximum Weight Per Shelf*	50 lb / 22.6 kg		50 lb / 22.6 kg		50 lb / 22.6 kg	
Permitted Total Load	100 lb / 45.3 kg		200 lb / 91 kg		200 lb / 91 kg	

*Extra standard and reinforced shelves available. See Accessories.

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SMO Series Oven Specification Chart

	SMO14-2	SMO28-2
Interior Volume, Nominal	14.6 cu.ft. (413 liters)	27.6 cu.ft. (781 liters)
Interior Dimensions W x D x H	30.8" x 24.8" x 31.0" 782 x 630 x 788 mm	30.8" x 25.0" x 61.0" 782 x 635 x 1575mm
Exterior Dimensions W x D x H	39.1" x 34.0" x 48.0" 953 x 864 x 1219mm	39.1" x 35.0" x 78.3" 953 x 889 x 1989 mm
Interior Construction	430 series stainless steel	430 series stainless steel
Exterior Construction	Painted Cold Roll Steel	Painted Cold Roll Steel
Shelves (See Accessories)*	3 standard, 8 total	6 standard, 16 total
Maximum Weight Per Shelf*	75 lb / 34 kg	75 lb / 34 kg
Permitted Total Load	225 lb / 102 kg	450 lb / 204 kg

*Extra standard and reinforced shelves available. See Accessories.

Electrical, 50/60Hz, AC, 1Ø

Voltage	230V	230V
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Temperature Range 15°C above ambient to 260°C

Temperature Uniformity

At 80°C	1.5°C	1.5°C
At 150°C	3.0°C	3.0°C
At 260°C	7.0°C	7.0°C

Ventilation

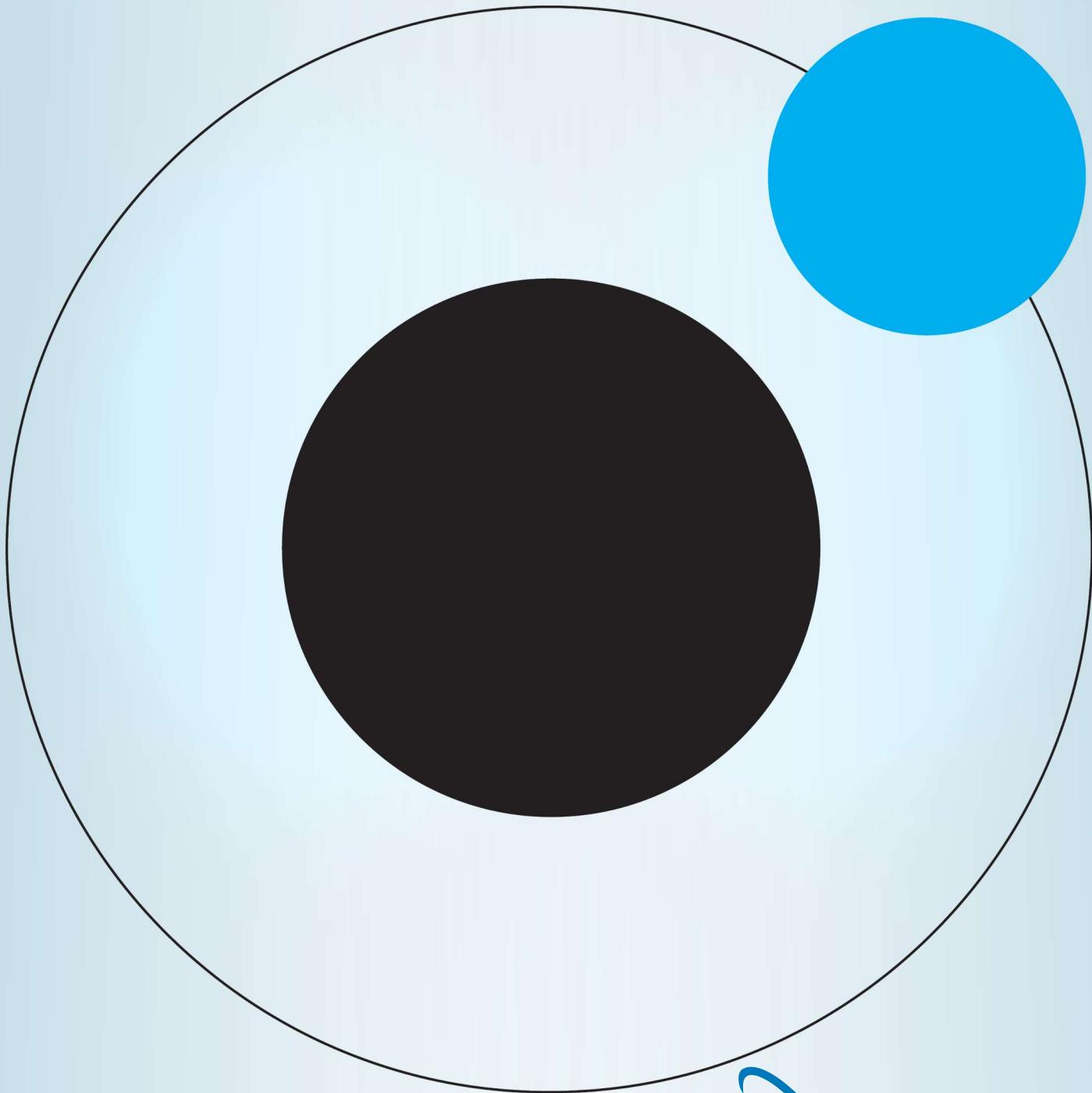
Air Changes Per Hr at Max	175	85
Max CFM	42	39.4

SMO Oven Options and Accessories

	SMO14-2	SMO28-2
Caster Platform	9000596	9000596
Shelf with Clips	9751244	9751244
Sliding Shelf Option Includes 1 Shelf, 2 Slides	9751368	9751368

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