

SHEL LAB®

SMO5CR-2

Clean Room Grade Performance Oven



SHEL LAB is a Sheldon Manufacturing Brand. P/N 0740511. Rev. 2024.

SHEL LAB SMO5CR-2's adjustable air intake and exhaust ducts are easily removed for cleaning. Chamber air is continually passed through the particle filter in the SMO5CR-2's horizontal airflow regimen; this contrasts with other oven designs that merely filter the incoming air once. A nitrogen inlet purge port is standard to reduce external air ingress and risk of contamination. SMO5CR-2 cleanroom ovens are made with high-temperature, wrap-around insulation, and a high-temperature silicone door gasket. Please note that the filter may be weak-ened if the oven is operated above 200°C, but is effective and serviceable up to 270°C.



- + Horizontal Airflow.
- + Encapsulated Insulation.
- + Advanced PID temperature control system for sensitive response.
- + **NEW** Watlow PM9 Plus Controller.
- + Independent overtemperature set point and operational control override for additional safety.
- + Brushless Circulation Blower Motor.
- + Class E11 Efficiency Particle Filter.
- + 300 Series Stainless-Steel Exterior.
- + Fully Welded Stainless-Steel Interior.
- + Internationally certified CAN/CSA, UL, EN, IEC 61010, and compliant with CE.
- + Two-Year warranty.

SHEL LAB SMO5CR-2 cleanroom oven incorporates all the special features needed for high-temperature cleanroom work: stainless-steel interior, adjustable perforated stainless-steel shelves, and rapid heat recovery. The Watlow PM9+ controller can handle a 40-step ramp and soak profile or four files with ten steps per file. SHEL LAB SMO5CR-2 cleanroom ovens are made with high-temperature, wrap-around insulation, and a high-temperature silicone door gasket. The SMO5CR-2's adjustable air intake and exhaust ducts are easily removed for cleaning. Chamber air is continually passed through the Class E11 efficiency particle filter in SMO5CR-2's horizontal airflow regimen; this contrasts with other oven designs that merely filter the incoming air once. A nitrogen inlet purge port is standard to reduce external air ingress and the risk of contamination.

Applications:

HEALTHCARE INDUSTRY

- Annealing the plastics on syringes and catheters
- Adhesive curing and coating curing on pacemaker
- Curing the coating on stents
- Polymerizing contact lenses
- Curing the coating on eyeglass lenses
- components
- Epoxy and adhesive curing
- Die bond curing
- Baking of coatings

MANUFACTURING

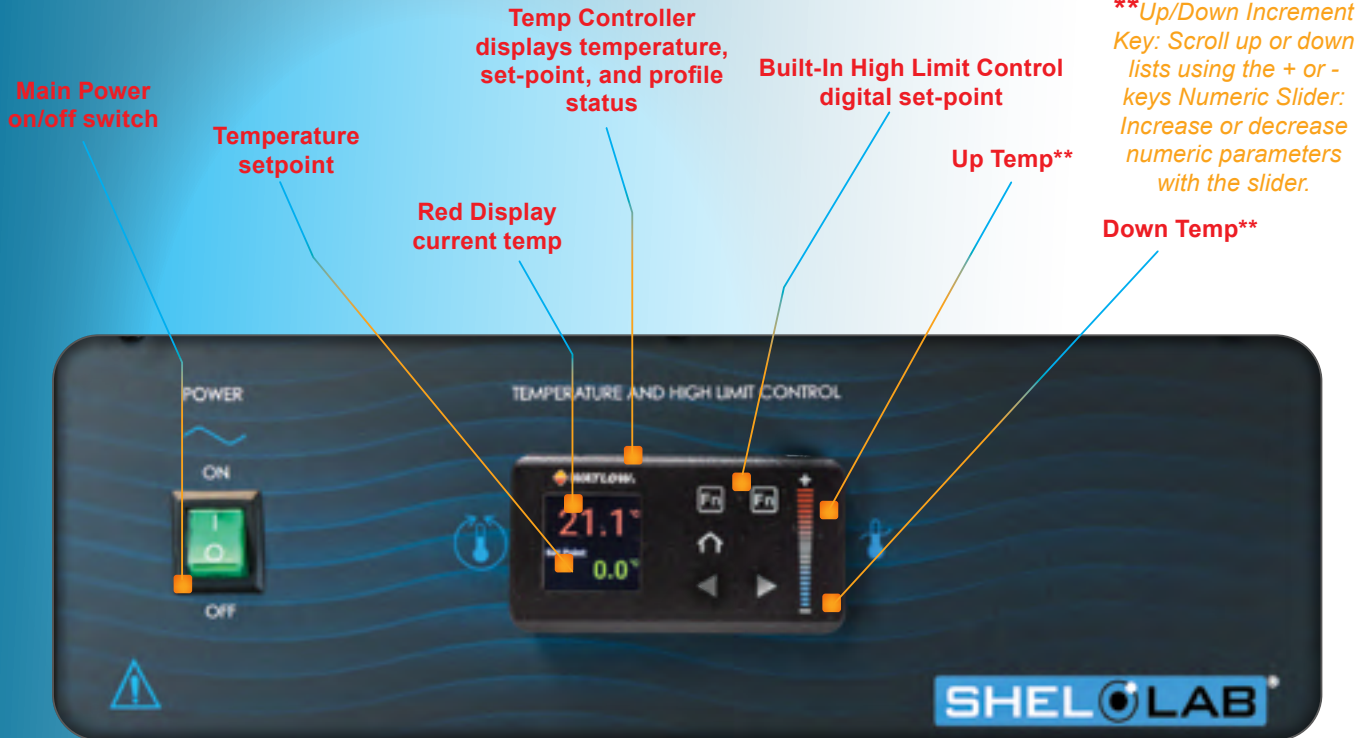
- Curing, drying, heating wafers, and electronic



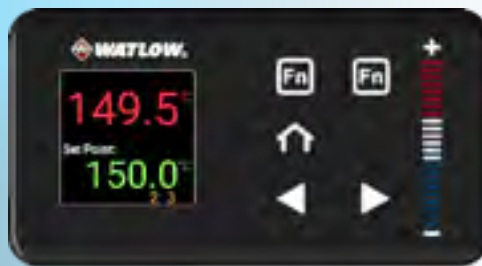
Control, Timer Program, and Monitoring

The Watlow PM9 Plus PID (proportional, integral, derivative) controller commands proportional power to the heating elements to provide the most accurate and responsive control. The control parameters are matched to the oven size to assure faster response to setpoint with minimal overshoot and quicker recovery following door openings. Also, the controller supports custom recipe creation for full ramp and soak control

for any custom applications. A total of 4 recipes with up to 40 steps can be used to configure the oven to your process. 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 over-temperature control, digital temperature set point adjustments, and indicator lights for all functions.



New Watlow PM9+



Temperature Controller - Display on Homepage

Top Line (Red): Present chamber shelving temperature

Middle Line (Green): The constant temperature setpoint

Bottom Line: Flashing "2" indicates active heating.

Bottom Line: "3" indicates the blower is on.

The Home button allows immediate navigation back to the home screen, where it displays the current temperature and the set

temperature.

While on the homepage, use the (+) and (-) buttons or swipe up or down on the +/- bar to alter the constant temperature setpoint. On Operations pages, these controls are used to select Operation options, modify the high limit setpoint, adjust calibration offsets, and configure program variables.

From the homepage, pressing the forward arrow button progresses through various parameter option pages, such as Event 1 and Units of Measurement (Celsius or Fahrenheit). This button is also used

for advancing through menus and parameter lists while programming a temperature recipe.

The back arrow button takes the display back to the previous page or menu. Continuously pressing this button will eventually navigate the display back to the homepage.

Pressing the left Fn button activates Profile Program 1. Pressing it again during its execution will stop Program 1. Similarly, the right Fn button initiates Profile Program 2 (Step 11) and pressing the button a second time while it is running will halt Program 2

Model Name	SLFCR523-H	
Capacity	3.9 cu.ft. (111 liters)	
Interior Dimensions (W x D x H)	17.0" x 20.0" x 20.0" 431 x 508 x 508 mm	
Exterior Dimensions (W x D x H)	35.0" x 30.0" x 37.6" 889 x 747 x 955 mm	
Shelves	2 standard, 4 max	
Warranty	2 Year Limited Warranty	

Temperature Specifications

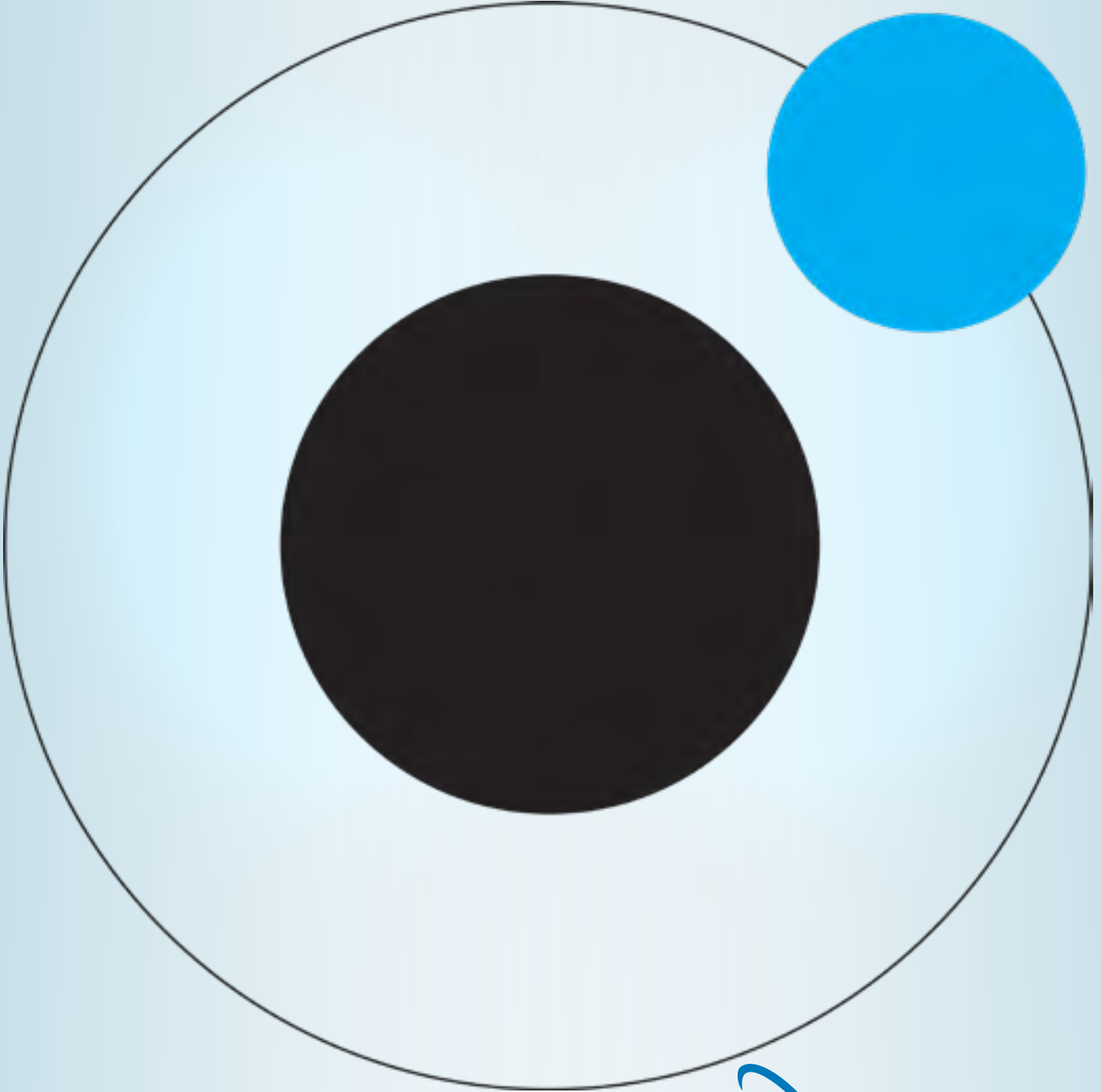
Temperature Range	20°C above ambient to
Heat-Up Time — Minutes to 150°C	25
Recovery after Door Opening (30 sec.) - Minutes to 150°C	6
Recovery after Door Opening (60 sec.) - Minutes to 150°C	6.5

Temperature Uniformity

At 80°C	1.0
At 150°C	2.5
At 270°C	5.0

Accessories

5121189	Oven Shelf Slide (2 required per shelf)
5121195	Oven Shelf (2 slides required to install)
9000584	Caster Platform
9490586	USB - RS485 Converter Cable
9990503	Class E11 Efficiency Particle Filter
SMO5CR-2EXT1	1-Year Extended Warranty
SMO5CR-2EXT2	2-Year Extended Warranty
SMO5CR-2EXT3	3-Year Extended Warranty



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