LABWAVE 915MHZ MICROWAVE TEST CHAMBER

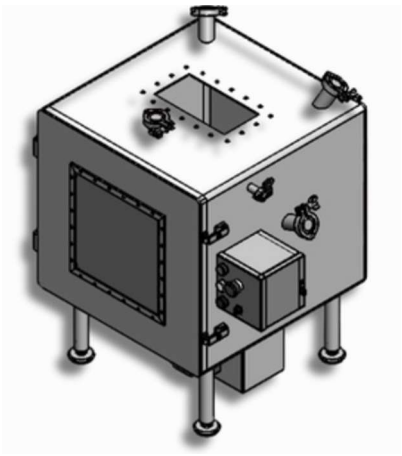
The Crescend Solid-State Lab Oven delivers a reliable, robust design structure engineered for the demands of testing and R&D.

Large access door with built-in microwave choke to prevent leakage, includes safety interlock to ensure safe operation

Four (4) tri-clamp ports strategically located to provide microwave leakage-free mounting points for instrumentation such as pyrometers, thermal imagers, video cameras, and other sensors.

One additional tri-clamp port for gas infeed and a separate square port for exhaust. The oven is airtight and can be pressurized up to 5 psi.

The LabWave test oven is purpose-built to pair with Crescend's PTL-2.5kW solid-state microwave generator to deliver stable, frequency-agile solid-state RF energy for unmatched control and repeatability. This integrated solution offers precise energy delivery control that can be tuned within the 902 - 928 MHz band to match the frequency to the specific dielectric properties of your materials. The result is consistent, uniform heating and complete command over your thermal processes, from initial testing through process development.



Key Features:

- **Ultra-High Temperature Capacity:** Capable of processing a wide range of demanding thermal applications— making it ideal for heat-treating specialty metals, material science, and manufacturing R&D in a controlled lab setting. When paired with our Crescend PTL- 2.5 microwave generator the programmable multi- step recipe control allows for shorter cycle times
- **Integrated Multi-Zone Ports**: Designed with real- lab use in mind. 4 tri-clamp ports for sensors and other instrumentation provide real-time monitoring of temperature, pressure, gas composition and more. Precise control for repeatable experiments. Immediate feedback ensures tight process control and near-instant anomaly detection.
- **Precise Power Control:** When paired with our Crescend PTL-2.5 microwave generator, the patented PrecisePower™ software allows for precise control of frequency, dwell time, temperature and other process parameters. The ability to adjust the frequency within the 902 - 928 MHz ISM band allows for greater control based on the exact material being tested/processed.
- **Built-In Safety Redundancies:** The e-stop push button and contacting door switch are tied into the PTL-2.5's emergency stop circuit, providing enhanced safety and controlled shutdown during operation and emergency response situations. Access door includes a built-in safety sensor to verify proper closure and locking before system operation can begin.
- **Consistent, Uniform Heating:** Optional rotary table that ensures 360^{O} exposure to microwaves, eliminating hot and cold spots. The rotary table in combination with the frequency sweeping capability of the PTL-2.5 provides optimal uniform, controlled heating.
- **Inert Gas Atmosphere Control:** Process sensitive alloys and reactive materials with confidence using the available gas ports to introduce inert gas into the airtight chamber. Enables controlled, oxygen-free environments, prevents oxidation and contamination during process. Ideal for high-value materials, metal powders and reactive compounds. The exhaust port on the oven ceiling is used for off-gassing.

LABWAVE 915MHZ MICROWAVE TEST CHAMBER

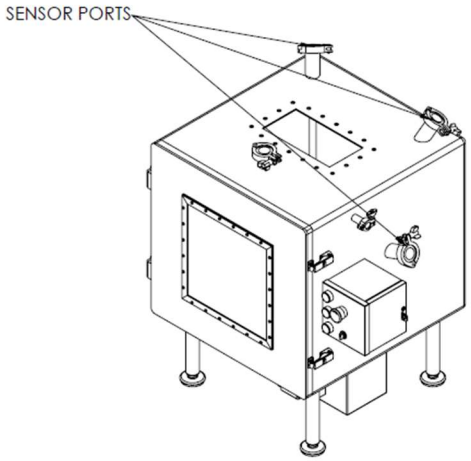
Feature:	Specification:
Exterior Dimensions:	28.75" W [730.25] x 23.42" D [594.9] x 32.35" H [821.7]
Interior Dimensions:	22.15" W [562.61] x 22.15" D [562.61] x 18.0" H [457.2]
Interior Volume:	5.1 cubic feet / 144.4 L
Door Opening:	16.4” W [416.5] x 12.27” H [311.6]
Construction Material:	Heavy Duty 304SS Cavity & Door
Instrument Ports:	Four (4) 1.5” [38.1] tri-clamp
Gas Inlet/Outlet Ports:	One (1) 1.5” [38.1] tri-clamp for gas inlet One (1) 3.5” square exhaust port, mounts 120mm exhaust fan
Microwave Input:	WR975 waveguide launcher feed
Frequency Band:	902 – 928 MHz ISM band, adjustable
Microwave Leakage:	< 1.0 mW/cm^2 at maximum power input
Safety:	Emergency Stop Door Interlock
Temperature Range:	Ultra-high temperature capability, contact Crescend for more information
Door Interlock:	Key Interlock, Normally Closed Switch
Power:	Rated for 2.5kW
Temperature Rating:	Process dependent; door rated to 105°C/221°F
Pressure Rating:	15-17psia
Voltage Rating:	24VDC supplied from PTL-2.5 for emergency stop & indicators 120VAC supplied to optional motor

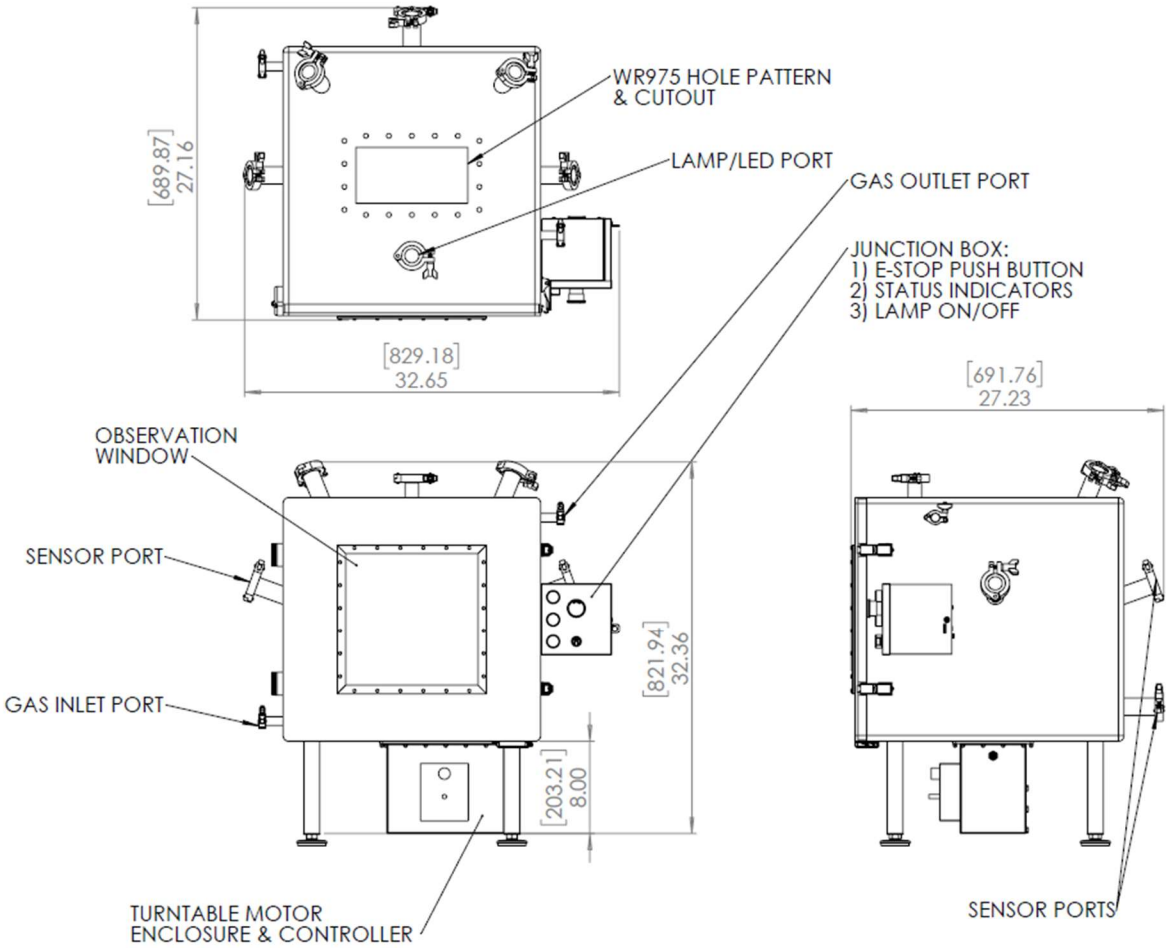
Optional Accessories:
Turntable Kit
Pressurization Kit
IR Pyrometer
Thermal camera/imager
HD Video Camera
High-Temperature Test Kit

Hardware Requirements:
PTL-2.5 Microwave Generator
Windows PC

*The LabWave ™ Test Chamber is currently in the prototype stage of development. All specifications, performance data, and measurements referenced are based on design models and preliminary testing. Actual performance may vary, and specifications are subject to change without notice. Final product features, capabilities, and configurations will be validated and confirmed upon completion of production engineering and testing phases.

LABWAVE 915MHZ MICROWAVE TEST CHAMBER





Revision History

Revision	Revision Description	Revision By	Revision Date
P2	Initial Release	J Tweedt	15Aug2025
P3	Revise oven dimensions & specs	J Tweedt	14January2026