

Curious about using microwaves in your process? Not sure where to start?

Introducing the Narya-Mini – A compact, easy-to-use, fully customizable treatment chamber for testing material heating profiles using microwaves. Designed around a commercially available microwave oven, Rivendell Technologies has integrated a brand-new control system and HMI to enable complete control of the magnetron within.



SYSTEM SPECIFICATIONS NARYA-MINI

- Power Output: 0 – 1200W
- Frequency: 2450MHz
- Documentation: Full access to code base, hardware schematics, bill of materials and CAD files

Three Primary Treatment Modes

- Manual – Like a standard microwave
- Target Temperature – Set a temperature target and let our chamber get the sample to that temperature and hold it there for as long as you want
- Profile – Create treatment profiles of multiple target temperatures and/or powers

Hardware Options:

- Inconel tipped thermocouple for measurements up to 1500 deg C (up to two thermocouples per chamber)
- IR Measurement of temperature
- Gas Inlet and Outlet ports (tailored to customer specifications)
- Thermal shielding box to contain samples and support operation up to 1500 deg C
- Convection cooled water load for minimizing reflected power to the magnetron when testing low loss samples
- Wireless data transfer between the chamber and the control software (standard)
- Rivendell can also assist with the design and manufacture of custom quartz treatment vessels



Software Features:

- Full access to all underlying control variables:
 - Calibration factors
 - Ramp rates
 - Control loop variables
 - Interlock set points
 - User set point limits
- Live trend view of all monitored data:
 - Configurable time base of 30 seconds, 1, 5, 10, 30 or 60 minutes
 - X and Y cursors for close examination of displayed data
- Data Logging Capability:
 - Auto-generate data logs with each run
 - Continue logging data for a configurable time after a process (to log the cool down profile)
 - Control of what data gets sent to the log file
 - Ability to reload data log data back into the live trend viewer or export the data for use in other software
- User Profiles:
 - Ensure only pre-approved staff can access the software
 - Save your favorite default settings
 - User idle login timeout – Ensure that the software locks after a pre-determined length of time without any user activity

Customizable interior

- Gas inlet and output ports
- Removable convection cooled load (to minimize reflected power to the magnetron)
- Thermal insulation box to support sustained operation to 1500C

HMI DISPLAY

- Windows based HMI with all of the modern features –
- User Profiles
- Live trend viewer
- Data logging
- Interlocking and much more

