

# NuWav-Uno

Microwave Synthesis/Extraction System



**Now with  
Explo-Protec  
Chamber Security  
Mechanism**

Over 30 Years of Cumulative Experience in Microwave Synthesis & Digestion  
1st Synthesizer to be constructed COMPLETELY of Stainless Steel 316L  
Unparalleled Precision and Control paired with Multiple Safety Parameters



**Versatility of controlling Temperature and Microwave Power through Precise Sensors**

**Exclusively Innovated Explo-Protect Chamber Security Mechanism**

**Completely Constructed from Industrial Grade 316L Stainless Steel**

**Upgradable with a Ultraviolet System**

**NuWav-Ultra** Microwave Synthesis/Extraction System, a sub-version of tradition, is a user-oriented practical, compact and intelligent Microwave Reactor made by **Nutech** with over 30-years of combined experience in Microwave Technology. Work effortlessly and hassle-free with the most advanced and precise Microwave-Synthesizer available. **NuWav-Ultra** provides safety, unparalleled durability and convenience of operation yet assuring a plethora of customisable parameters.

- Full Industrial grade 316L Stainless Steel Construction
- Small size for convenience
- New Intelli-System designed for virtually effortless operation
- Efficient and Precise power delivery for optimum results
- High Resolution Acid-Resistant Wide Format Touchscreen
- Large 7-inch screen with integrated Graphical UI
- System provides Pre-Set Modes for the user's ease
- Real-time temperature, instantaneous power, stirring speed, total time, time remaining, UV status
- Reaction graphs are displayed (Temperature-Power vs. Time)
- Integrated step-by-step guidance for reactions
- Safety/Security and overshoot warnings for the user
- Intelligent Internal Sensors for system safety monitoring
- Forced Air-Cooling System with unique exhaust design
- Dynamic adjustment of Microwave power based on reaction
- Non-pulsating and continuous heating controllable in 1Watt increments
- Optimised position of magnetron for low-trajectory Microwave introduction
- Explo-Protect Chamber Security Mechanism ensures safety
- Double Locking Self-Checking Door
- High-precision German-Engineered IR temperature sensor
- Integrated Platinum (Pt) resistance temperature sensor
- User selectable IR or Pt100 sensor for temperature monitoring
- Temperature sensors provide for a stable temperature hold time
- High power Magnetic Stirrer with adjustable stirring speed
- Equipped with Reflux System
- Condensation and Circumfluence attachments available
- Integrated Inert Gas Purging System
- HD-Camera & External High-Resolution TFT for viewing reaction
- Reactions vessels available in Glass
- Ultra-Violet Reaction System with Status Display (OPTIONAL)
- UV system can be programed as well as switched manually (OPTIONAL)
- Reactions vessels available in Quartz (OPTIONAL)
- Vessel capacity ranging from 10ml to 500ml (OPTIONAL ACCESSORIES)
- Wireless HD VIDEO LIVE STREAMING SYSTEM (OPTIONAL ACCESSORY)





The system dynamically adjusts microwave power based on reaction temperature to generate non-pulse and continuous heating with a minimum increment of 1 Watt. Optimised placement of the magnetron for low trajectory of microwave introduction ensures maximum efficiency heating. Microwave and Ultraviolet irradiation can be used conveniently by combining in any combination or separately. High Precision German Engineered IR sensor is used for precise monitoring and controlling of reaction temperature. Platinum (Pt) resistance temperature measurement is adapted for automatic recognition and intelligent control of temperature measurement mode and max. temperature to meet the need of different reaction containers and media. User can select between the IR and Pt sensor for a given process. High Speed Magnetic stirring with adjustable Stirring speed and displaying. The Product is equipped with condensation, reflux and inert gas purging facility. HD camera is installed for the observation of the process and status of the reaction in the vessels via external TFT colour liquid display.

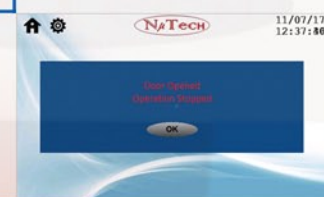
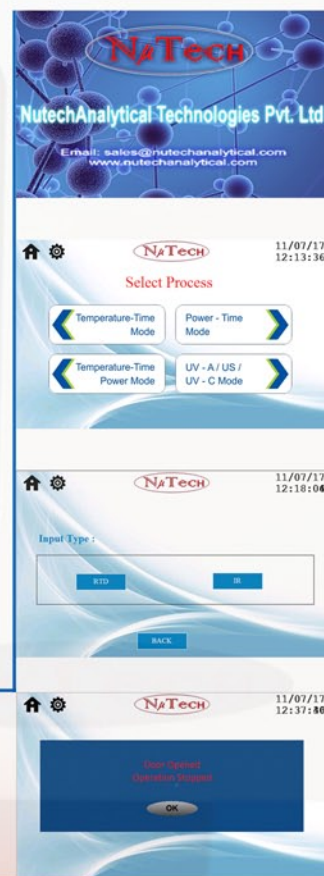


Sturdy and Durable Industrial Grade Stainless Steel 316L construction of the whole Instrument Structure ensures no rust and a long lifespan of the NuWav-Uno without any maintenance. Professional Focused Microwave design provides for High Efficiency heating. Multi-layer chemical resistant colour coating of the whole instrument improves service life and safety of the system. The Explo-Protec Chamber Security Mechanism pops-up the door (4-12mm depending on the pressure), releases the pressure and pops back to its closed position in case of an explosion inside the reaction chamber thus providing a layer of safety to the user. Double Locked Self-Checking System and Push-Button Door release ensures simple and easy operation yet providing safety to the user. High Speed Air Cooling and Exhaust Systems achieves fast cooling and unparalleled exhaust, improving operational efficiency.



Industry's 1st Intelli-System integrated in a 7-Inch Acid/Corrosion Resistant Touchscreen with a Graphical UI makes operating the NuWav-Uno effortless. The system provides Pre-Set modes and step-by-step guidance for the user's ease. All vital information such as Real-Time Temperature, UV System Status, Instantaneous Power Output, Safety Power / Temperature, Hold time, Time Left, Total Elapsed Time, Process Name, Number of Steps of the Program as well as Real-Time Temperature-Power (in different colours and scale and are switchable) vs. Time Graph is displayed. Conversion of Conventional conditions to Microwave Synthesis parameters are provided in the system. Safety/security warnings (Door Ajar, Cooling and Exhaust System Fan Malfunctions and RPM), Process Completion are indicated to the user.

The Intelli-System's internal algorithm dynamically controls the Microwave Power based on Real-Time conditions thus eliminating any Temperature Overshoot. Non-Pulse Low-Trajectory Microwave Power is controllable in 1Watt increments. In case of any anomalies, the system warns the user and stops operating thus providing the user another layer of safety. Synthesis Programs can be saved, edited and sorted by Name/Date for later use, each program having upto 5 steps of inputs of Temperature, Power, Hold-Time as well as Safety Temperature, Safety Pressure, Safety Power Cut-Off and UV parameter inputs. The sensing, control capabilities and integrated safety parameters of the system makes the Intelli-System the most versatile and user friendly system which is way ahead of time.





# Technical Specifications Of NuWav-Uno Microwave Synthesis/Extraction System

Microwave Frequency	2450 MHz
Installed Microwave Power	1800 Watt
Construction:	
External Structure	Industrial Grade 316 Stainless Steel
Internal Microwave Chamber	Industrial Grade 316 Stainless Steel
Maximum Output Power	1000 W, Non-Pulsed Continuous Automatic Variable Frequency Control with an increment of 1 Watt
Temperature Measurement and Control System	High Precision German Engineered IR Sensor; Operating from 0°C to 300°C, Precision : +/- 1°C (Threshold Temperature is from Ambient to 350°C)  Platinum (Pt) Resistance Temperature Measurement is adapted for automatic recognition and intelligent control of temperature from 0°C to 300°C ; Precision: +/- 1°C (Threshold Temperature- Ambient to 350°C)
Monitoring	HD-Camera with External 4.3 inch TFT Display
Main-Display	Large (7") Wide-Format, High-Resolution(800 x 480) Acid-Resistant Touch Screen
Software	Versatile software to precisely control and adjust Microwave Power, Temperature, UV. Real-time parameters such as Total Time, Stirring Speed, Instantaneous Temperature and Power, Etc. are displayed Temperature- Power vs. Time Graphical Representation Microwave, UV can be used in any combination.
User Interface	Icon based GUI. Graphical Output. Real Time Status Display. Easy Setup
Memory	Virtually Unlimited Process Storage
Safety	Intelligent Overheat Cut-Off. System cooling malfunction warning. Door ajar warning. (With Message and Buzzer)
Magnetic Stirring	High Speed Magnetic Stirrer with Adjustable Speed and RPM display
Exhaust system of chamber	Corrosion-Resistant motor, with Air rate of 3.8 m <sup>3</sup> /min
Integrated	System is equipped with Inert Gas Purging facility, Reflux and LED light
Glass Flasks	50ml, 100ml, 250ml and 500ml.
Accessories	Reflux Condensing Pipe, Balance Dispenser, Oil-water Separator, Connectors, Stoppers, Stirring Beads, T-Stand, etc.
Working Environment Conditions	10°C - 50°C, Well Ventilated, Dust-Free Environment 15%-80% Humidity, Non-Condensing Microwave and Corrosion Shielded Components
Operating Voltage And Current	220/240 VAC, Non-Fluctuating Supply 110/120VAC(Optional) 50/60 Hz 15 Amp
Dimensions	365 mm x 550 mm x 560 mm (WxDxH)
Net Weight	48 Kgs

## Optional Accessories :

UV System	Ultraviolet Irradiation of 365nm / 300Watts
UV Options	Variable power and wavelength available
Glass Vessels	25ml, 1000ml
Quartz Vessels	25ml, 50ml, 100ml, 250ml, 500ml, 1000ml
Wireless Video System	Wireless FHD Video Live Stream, Recording and Snapshot capabilities. Multiple device connectivity.

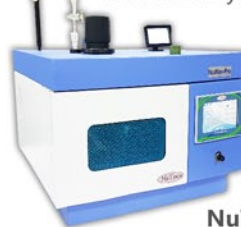
## Our Other Products:

Microwave Digestion System



NuWav-Ultra

Microwave-UV-US Synthesis/Extraction System



NuWav-Pro

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\*Actual colour and design may vary.

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