

# MUE - 3032

PRO- Microwave Ultrasonic Extractor



EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

**Analytical Technologies Limited**

An ISO 9001 Certified Company

[www.analyticalgroup.net](http://www.analyticalgroup.net)

- ▶▶ **Versatility of controlling Temperature and Microwave Power through Precise Sensors**
- ▶▶ **Exclusively Innovated ExploProtec Chamber Security Mechanism**
- ▶▶ **Completely Constructed from Industrial Grade 316L Stainless Steel**
- ▶▶ **Microwave, Ultrasound and Ultraviolet energies can be used solo or in any combination**

MUE-3032 Microwave-Ultrasonic-Ultraviolet Synthesis/Extraction System, a sub-version of tradition, is a user-oriented practical compact Microwave Reactor made by ATL. Work effortlessly and hassle-free with the most advanced and precise Microwave-Synthesizer available. MUE-3032 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, US status, reaction graphs are displayed
- 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
- Ultra-Violet Reaction System with Status Display
- UV system can be programed as well as switched manually
- Ultrasonic Reactor System with frequency and status display
- Ultrasonic System can be programed as well as switched manually
- System provides the combination or solo usage of UV, US and Microwave
- '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
- Reactions vessels available in Quartz(OPTIONAL)
- Vessel capacity ranging from 10ml to 1000ml(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, Ultraviolet irradiation and Ultrasonic energy 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 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 MUE-3032 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-Protect 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 MUE-3032 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 and Ultrasonicator System Status, Instantaneous Power Output, Safety Power/Temperature, Hold time, Time Left, Total Elapsed Time, Process Name 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/US parameter in puts. 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.



## ►► SPECIFICATIONS:

|  |  |
|--|--|
| 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                       | 1000W, 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: $\pm 1^\circ\text{C}$ (Threshold Temperature is from Ambient to 350°C)<br>Platinum (pt) Resistance Temperature Mesurement is adapted for automatic recognition and intelligent control of temperature from 0°C to 300°C; Precision: $\pm 1^\circ\text{C}$ (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, US. Real-time Parameters such as Total Time, Stirring Speed, Instantaneous Temperature and power, Etc. are displayed Temperature-Power vs. Time Graphical representation Microwave, UV, US 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 3.8m <sup>3</sup> /min   |
| Integrated                                 | System is equipped with Inert Gas Purging facility, Reflux and LED light   |
| Flasks                                     | Glass(50ml, 100ml, 250ml and 500ml); Quartz(100ml,250ml)   |
| Accessories                                | Reflux Condensing Pipe, Balance Dispenser, Oil-water Separator, Connectors, Stoppers, Stirring Beads, T-Stand etc.   |
| UV System                                  | Ultraviolet Irradiation of 365nm/300Watts  |
| US System                                  | Ultrasonic Probe with 6mm tip. 26kHz-28kHz frequency. 0-800 Watts  |
| 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)<br>50/60Hz<br>15 Amp  |

|            |                               |
|------------|-------------------------------|
| Dimensions | 655mm x 510mm x 455mm (WxDxH) |
| Net weight | 56kgs                         |

## ►► Optional Accessories:

|                        |  |
|------------------------|--|
| Ultrasonicator Options | Variable size tips for Ultrasonicator (2mm to 25mm)  |
| UV Options             | Variable power and wavelength available  |
| Glass Vessels          | 25ml, 1000ml   |
| Quartz Vessels         | 25ml, 50ml, 500ml, 1000ml  |
| Wireless Video System  | Wireless FHD Video Live Stream, Recording and Snapshot capabilities, Multiple device connectivity. |



## Regulatory compliances



## Corporate Social Responsibility

Analytical Foundation is a nonprofit organization (NGO) found for the purpose of:



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1. Research & Innovation Scientist's awards/QC Professional Award : Quality life is possible by innovation only and the innovation is possible by research only, hence ANALYTICAL FOUNDATION is committed to identify such personalities for their contributions across various field of Science and Technology and awarding them yearly. To participate for award, send us your details of research / testing / publication at [Info@analyticalfoundation.org](mailto:Info@analyticalfoundation.org)

2. Improving quality of life by offering YOGA Training courses, Work shops/Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds,souls and body by means of yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

## Reach us @



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