

# XT-iMD Microwave Digestion System

Expert-Grade Microwave Digestion and Extraction System

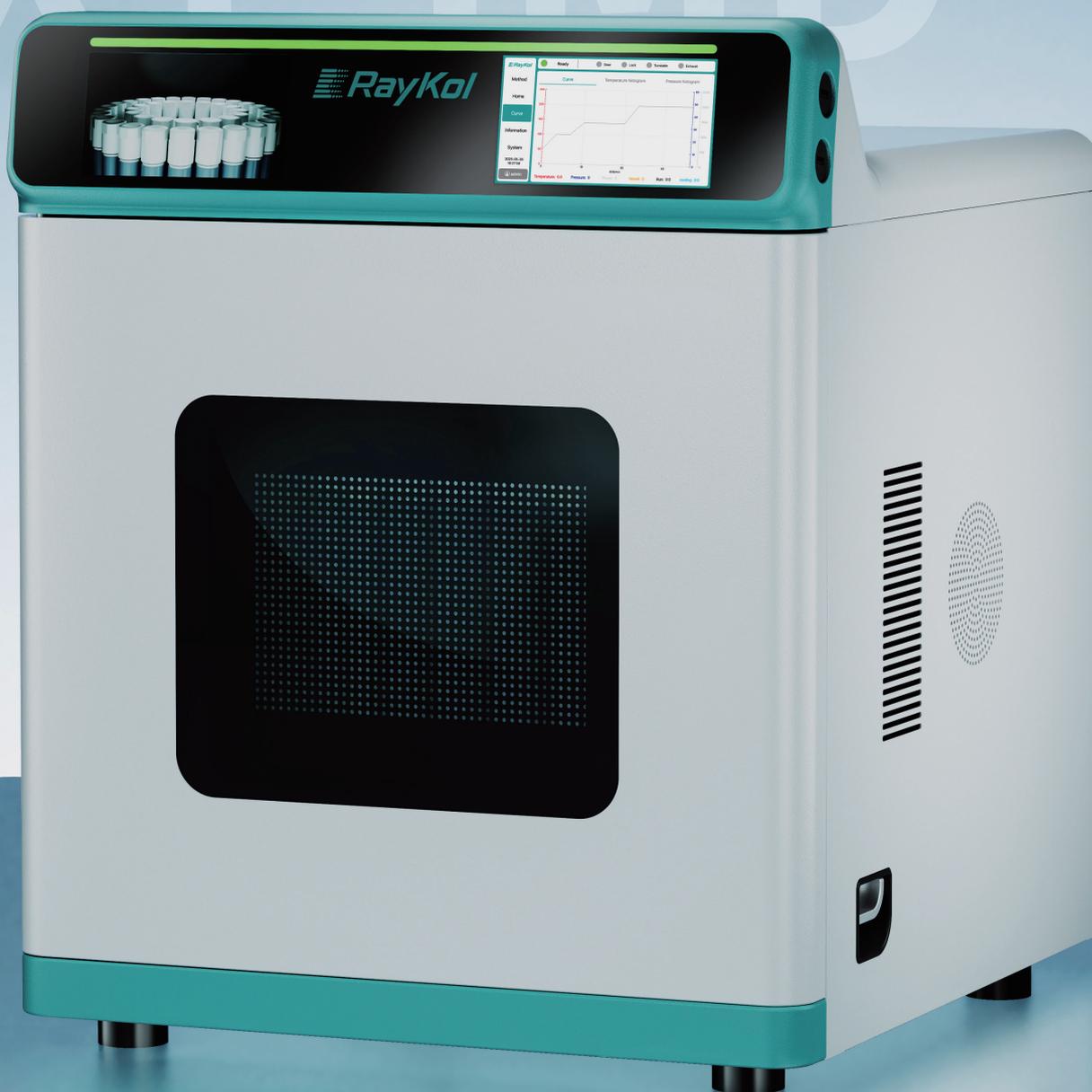


Leading Manufacturer in Automated and Smart Sample Preparation

Drafting Organization of Standard GB/T 26814-2011 Microwave Digestion Equipment

# XT-iMD Microwave Digestion System

RayKol-XTrust has over 20 years of extensive experience in the field of sample preparation. XT-iMD Microwave Digestion Systems feature up to 10 active and passive safety protection functions. Equipped with a specialized mid-infrared non-contact temperature sensor that can penetrate TFM, the system enables real-time scanning and display of the actual temperature of each sample solution. The non-contact full-vessel pressure control system, utilizing high-precision optical distance measurement, allows real-time scanning and display of the actual pressure of each digestion vessel. This ensures optimal digestion efficiency for a wide range of sample types in the most convenient and efficient manner.



# Expert-Professional Microwave Digestion System

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## High Efficiency & Rapid Processing

Intuitive & User-Friendly Design to Streamline Workflow

**Microwave Control:** Focused Microwave Emission, High-Power Microwave Delivery

**Energy Consumption Management:** Optimized Operating Parameters to Maximize Usage

**Sample Loading:** Easy Vessel Assembly and Sample Loading

**Compatible with Various Vessels:** Processes up to 42 Samples at Once



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## Safe & Reliable Operation

Multiple Safety Protections

**Active & Passive Protection:** Ensures Safe Operation, Smartly Reminders

**Door and Lock Mechanism:** High-Strength Explosion-Proof Door with Side-Opening Pressure Release

**Corrosion-Resistant Ventilation:** Multi-Layered Design for Corrosion Resistance, Efficient Airflow, and Rapid Cooling



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## Precise Monitoring & Control

Sample Status Monitoring, Ensures Efficient Digestion for Reliable Data

**Mid-Infrared Temperature Monitoring:** Scans and Displays Actual Temperature of All Samples in Real-Time

**Pressure Monitoring:** Real-Time Monitoring of Sample Pressure

**Parameter Display:** Real-Time Display of Sample Temperature, Power, and Digestion Progress



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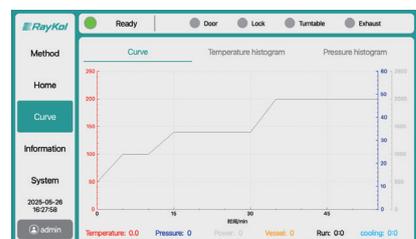
## Smart & Convenient Operation

Intuitive & Easy-to-Use Interface

Easily Customizable Digestion Methods

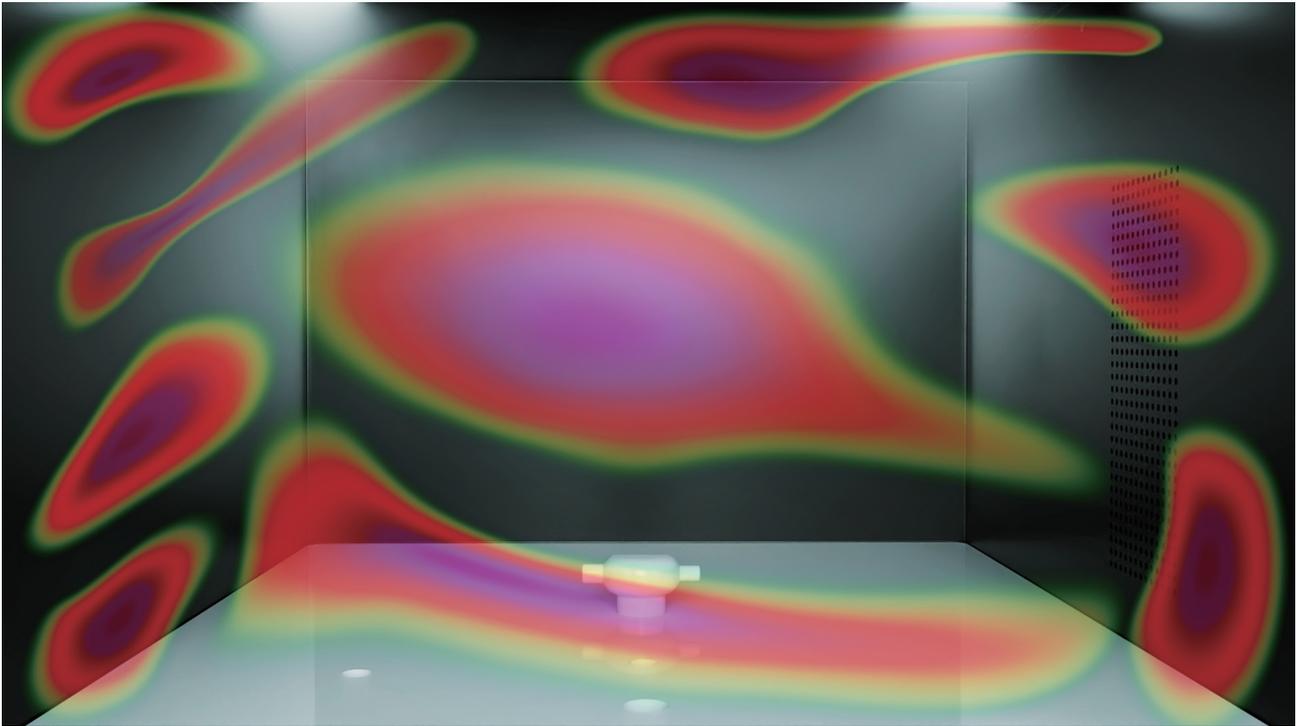
**Smart Detection:** Sensors Automatically Detect Rotor Type and Vessel Count

**Light Indicator:** Effortless Monitoring of Equipment Status

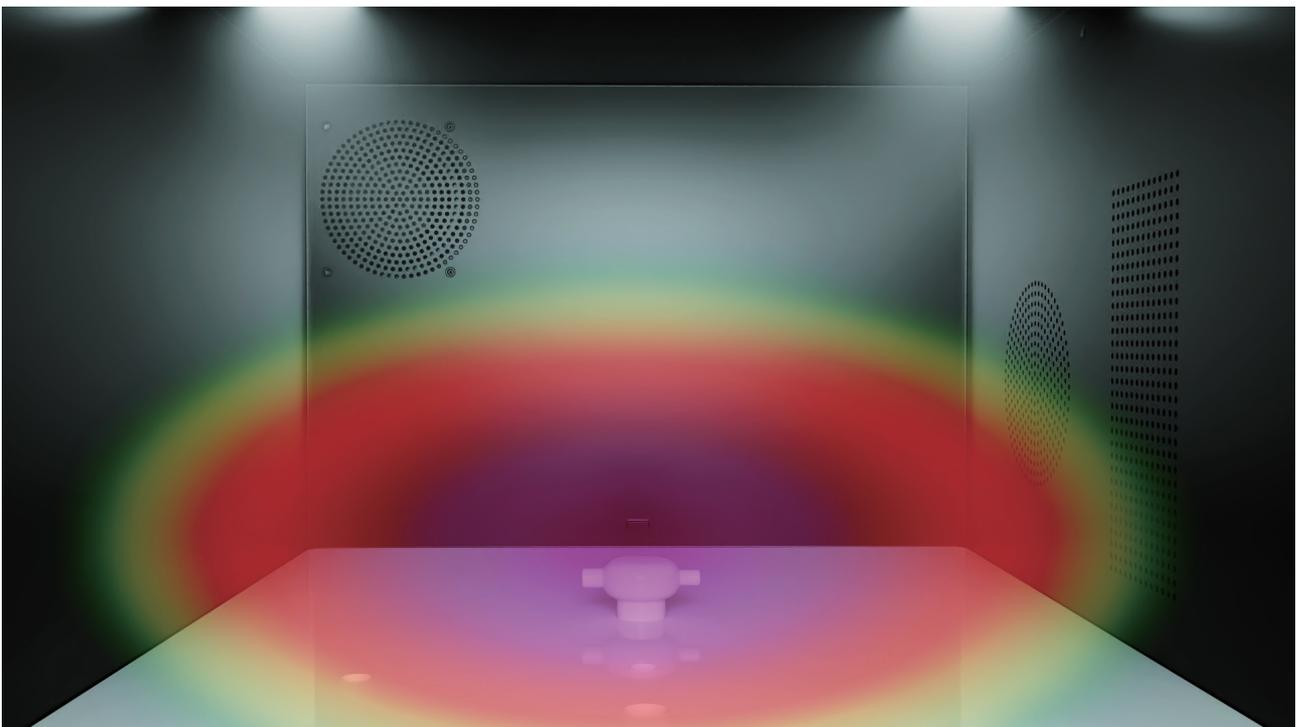


# Unique Microwave Focusing Technology

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Schematic Diagram of Microwave Field Intensity Distribution of a Conventional Microwave Digestion System



Schematic Diagram of Microwave Field Intensity Distribution Using Microwave Focusing Technology

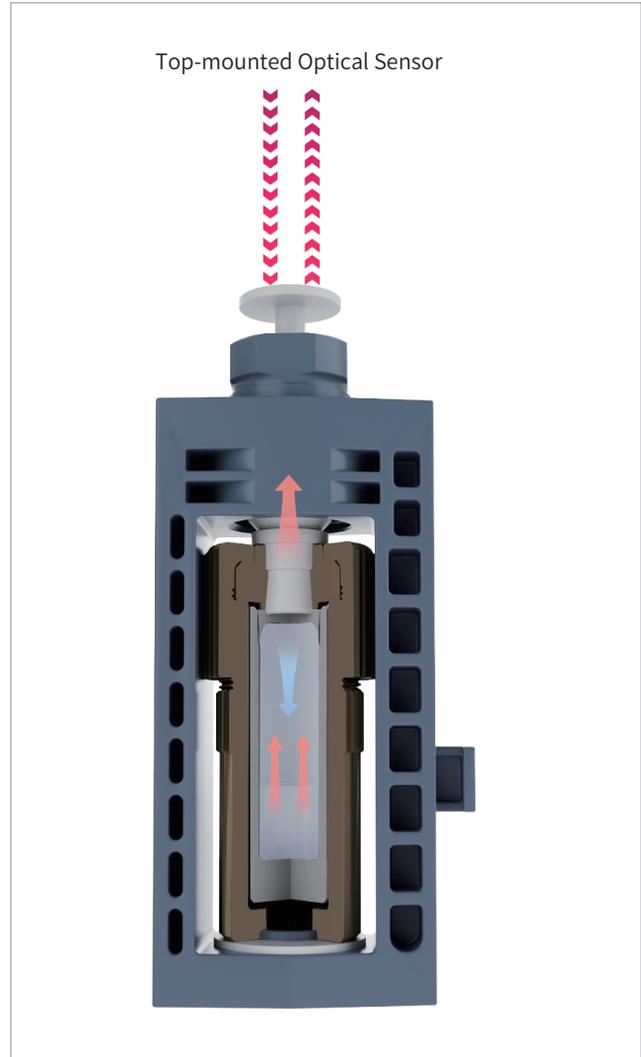
# High-precision Smart Pressure Monitoring Mechanism

High-precision smart pressure monitoring mechanism, to ensure safety for all digestion vessels.



## High-throughput Digestion Vessel

- Automatic pressure-release mechanism to ensure reliable release of overpressure reaction gases
- Pressure generated during the reaction is limited by the smart overpressure release structure
- Consists of only three parts, easily assembled without any tools
- Suitable for digesting various types of samples, including food, wastewater, soil, biological, agricultural, and pharmaceutical samples
- 42-position rotor, ideal for handling large sample batches

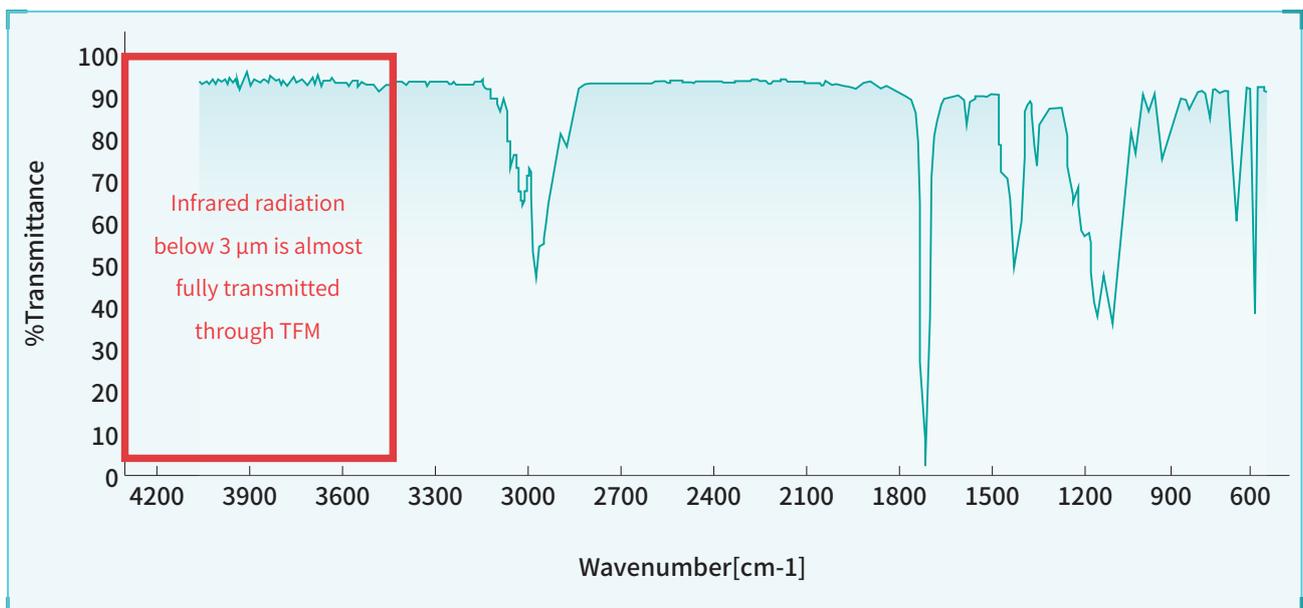
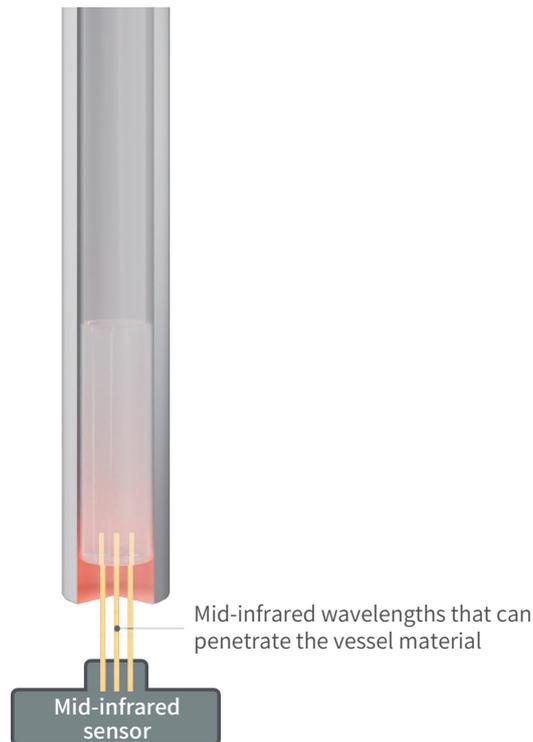


## High-pressure Digestion Vessel

- Real-time pressure display for each digestion vessel through a high-precision optical distance measurement system
- Pressure generated during the reaction is limited by the smart overpressure release structure
- Higher performance, capable of handling more complex samples such as alloys, ceramics, cosmetics, ores, compounds, and chemicals
- Supporting frame design ensures safe operation at the highest temperature and pressure

# High-precision Real-time Temperature Feedback Technology

The mid-infrared temperature measurement system utilizes the ability to penetrate the vessel walls, while materials like TFM do not absorb mid-infrared radiation. This allows for non-contact, real-time dynamic measurement of the temperature inside the vessel, enabling highly precise and reliable temperature monitoring of each sample. It is the first to leverage the unique property of mid-infrared wavelengths that can penetrate the vessel material, achieving non-contact, real-time scanning and monitoring of the actual temperature inside all vessels.



# Product Configuration



High-Throughput Digestion Vessel	
Positions	42
Circles	2
Material	TFM
Temp. Measurement	Mid-Infrared
Volume	55mL

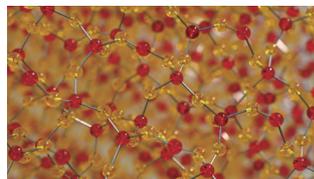
High-Throughput Digestion Vessel	
Positions	42
Circles	2
Material	TFM
Temp. Measurement	Mid-Infrared
Volume	75mL

High-Pressure Digestion Vessel	
Positions	16
Circles	1
Material	TFM
Temp. Measurement	Mid-Infrared
Volume	100mL

<b>Power Supply</b>	220-240VAC 50/60Hz
<b>Microwave Supply</b>	2450MHz, Variable-Frequency Magnetron High-Energy Microwave Field Emission
<b>Microwave Cavity</b>	316L Stainless Steel Resonant Cavity, Multi-Layer Teflon Coated
<b>Safety Explosion-Proof Door Design</b>	High-Strength Safety Explosion-Proof Door, Side-Opening with Floating Buffer Design
<b>Temperature Measurement &amp; Control System</b>	Mid-Infrared Non-Contact Temperature Sensing
<b>Control System</b>	Full Touchscreen Operation, Extra-Large Screen Real-Time Display of Parameters & Status
<b>Total Output Power</b>	2400W
<b>Ambient Temperature/Humidity</b>	0~40°C / 15~80%RH
<b>Digestion Rotor</b>	Independent High-Pressure Digestion Vessel
<b>Batch Capacity</b>	16 Positions / 42 Positions
<b>Inner Vessel Material</b>	TFM
<b>Outer Vessel Material</b>	PEEK or aerospace composite materials are optional

# Applications

Environmental Samples | Food & Feed Analysis | Materials Testing  
 Petrochemical | Plastics & Polymers | Cosmetics | Metals & Alloys | Geological Samples





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