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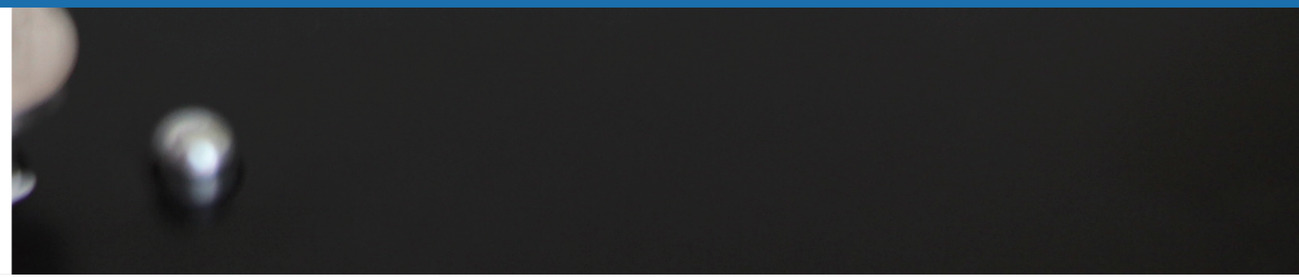
i-Master · i-MEZ

INNOTEG INTELLIGENT MICROWAVE DIGESTION SYSTEM



Real-time non-contact pressure monitor :

Multiple built-in non-contact pressure sensors: real-time scan, monitor and display the pressure for every digestion vessel.

Touch screen :

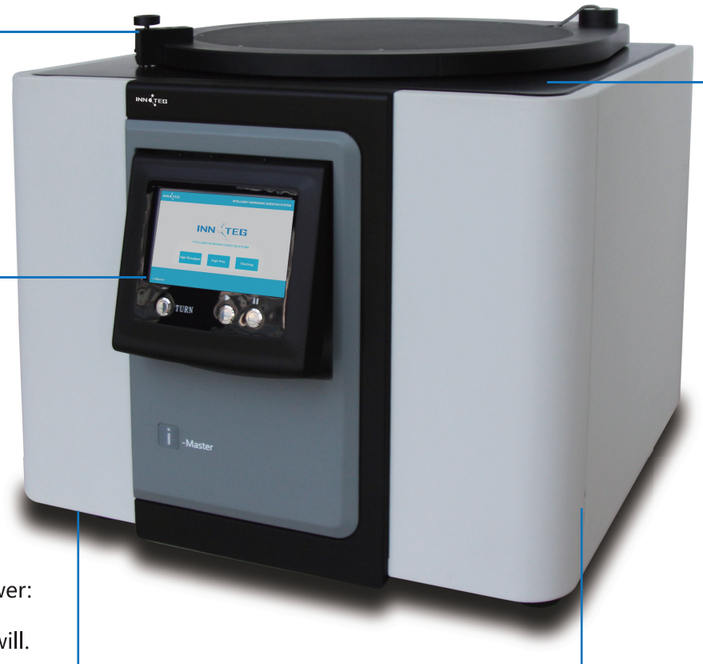
Visual and convenient to use with large-size touch screen: display working parameters (temperature, pressure curve).

High-frequency high-voltage microwave power :

High-frequency high-voltage microwave power: small temperature rise, high efficiency, light weight, microwave output power control at will.

Over-current protection switch :

Automatic power cutoff in case of over-current, with improved safety.

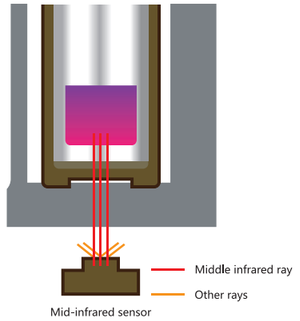


Ultra-large cylindrical furnace chamber :

Industrial-grade explosion-proof cylindrical furnace chamber up to 78L, allowing more uniform heating. Multi-layer PFA coated inside is corrosion-resistant and easy to clean.

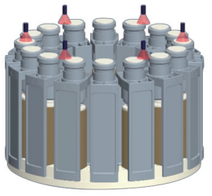
Real-time temperature monitoring by non-contact chamber :

With the use of mid-infrared ray penertate the chamber, it can monitor and display internal real-time temperature by scanning without contact.



Real-time non-contact pressure monitor :

Special non-contact mid-infrared temperature monitor: real-time scan and monitor sample solution temperature.



12-Vessel Rotor

16-Vessel Rotor

42-Vessel Rotor

High-temperature and high-pressure resistant framework for digestion vessel
Frame-style high-pressure digestion vessel: PEEK for outer vessel, TFM for inner vessel.

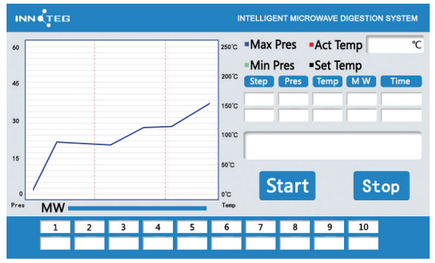
Non-destructive pressure-releasing groove
Automatic excess pressure release, without the need of explosion-proof membrane or other consumables.

Elastic pressure-controlling protection device
ON/OFF quantitative pressure-releasing, ensuring digestion process safety.

Elastic pressure-controlling protection device
Automatic 12/16/42-vessel rotor recognition, easy to update.

8-Vessel Rotor

10-Vessel Rotor

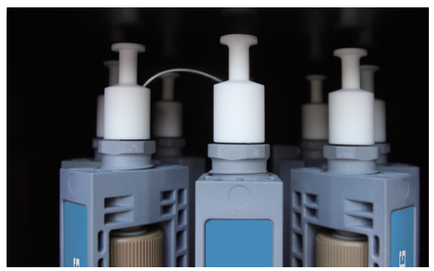


Touch screen displays temperature and pressure curves in real time.

Automatic 8/10-vessel rotor recognition, easy to use; uniform digestion vessel design allows easy rotor upgrading and also reduces upgrading cost.

Automatic ON/OFF quantitative pressure release, no exlposion-proof membrane or other consumables, ensuring digestion process safety.

Fiber optics temperature sensor accurately monitors temperature in the vessels, without causing "ignition" or "antenna effect" which may lead to microwave leak-age



Follow the innoteg safety control design concept: even equipped with standard optical probe, the rotor still can rotate in one direction at high speed (30rpm), which ensures even sample heating and pressure scanning and monitoring for every digestion vessel, and also avoids high-voltage risk and cable kinking and aging due to progressive rotation.

i-Master Technical Parameters	
Power & frequency	Program-controlled high frequency resonant high-voltage microwave power; Industrial-grade double-magnetron microwave output power, 0~2400W (control at will); Microwave frequency, 2450 MHz.
Microwave furnace chamber	316L stainless steel furnace chamber , volume, 78L; Six-layer PFA coated inside.
Volume and number of sample	Vessel volume: 100mL/ 75mL; 12/16/42 vessels at one time.
Automatic furnace chamber recognition	Automatic 12/16/42-vessel rotor recognition, easy to update.
Sample input mode	Overhead-type rotatable furnace door design, users can load and reload samples from the top.
Temperature monitor	Special non-contact middle infrared temperature monitor: real-time scan and monitor sample solution temperature with a visual temperature curve display. Temperature range: room temperature ~ 405°C (± 0.1°C).
Pressure monitor	Non-contact pressure sensor: developed from technologies of Phial-form metal clips with high elasticity, optical ranging system etc，scan and monitor every vessel’s pressure with a visual pressure curve display by real time. Pressure range: 0 ~ 11 MPa (± 0.01 MPa).
Pressure release	Automatic ON/OFF quantitative pressure release, without the need of explosion-proof membrane or other consumables, ensuring digestion process safety.
Digestion vessel	Frame-style high-pressure digestion vessel: PEEK for outer vessel, TFM for inner vessel. Maximum working pressure: 6.4 MPa (± 0.05 MPa), maximum pressure ≥ 15 MPa; maximum working temperature: 255°C; maximum temperature ≥ 300°C.
Working mode	① Easy to create, edit and save more than 256 kinds of digestion methods; ② Maximum 10 digestion steps setup for every method; ③ Intelligent heating rate control mode and thermostat control mode; ④ Automatic cooling mode is built in with the cooling stop condition is adjustable.
Multiple safety precautions	More than 10 active and passive security functions, including: ① Industrial-grade cylindrical furnace chamber, and overhead-type explosion-proof door with microwave leakage alarm function; ② Real-time monitor of temperature and pressure for every digestion sample*; ③ Over-pressure alarming limit; ④ Elastic pressure-controlling protection device; ⑤ Overheat and over-current protection; ⑥ Abnormal noise detection protection; ⑦ System failure self-check and warning; ⑧ High-temperature and high-pressure resistant framework for digestion vessel; ⑨ Non-destructive pressure-releasing groove; ⑩ Three powerful centrifugal exhaust fans (exhaust capacity, 6 m3/min) to protect operator from harmful gas.
Intelligent control	Visual and convenient to use with full touch screen; Display working parameters in real time (temperature, pressure curve and etc.); Chinese / English language selection; Large OK button avoids misoperation.
Power supply	220 V / 110 V, 50/60 Hz; Power: 3000 W.
Size	650 x 630 x 570 mm; Net weight: 70 Kg.

i-MEZ Technical Parameters	
Power & frequency	Program-controlled high frequency resonant high-voltage microwave power; Industrial-grade double-magnetron microwave output power, 0~1800 W (control at will); Microwave frequency, 2450 MHz.
Microwave furnace chamber	316L stainless steel furnace chamber, volume, 66L; Six-layer PFA coated inside achieves long life and easy cleaning; upper opening door design.
Volume and number of sample	Standard 10-vessel (100 mL), optional 8-vessel.
Automatic furnace chamber recognition	Automatic 10/8 vessel rotor recognition, easy to update.
Sample input mode	Pull down the furnace door, users can load and reload samples at the front.
Temperature monitor	Optical temperature sensor monitors sample solution temperature, with a visual temperature curve display.Temperature range: room temperature ~ 305°C (±0.1°C).
Pressure monitor	Non-contact pressure sensor: developed from technologies of Phial-form metal clips with high elasticity, optical ranging system and etc. The pressure sensor can real-time scan and monitor every vessel’s pressure with a visual pressure curve display. Pressure range: 0 ~ 11 MPa (±0.01 MPa).
Pressure release	Automatic ON/OFF quantitative pressure release, without the need of explosion-proof membrane or other consumables, ensuring digestion process safety.
High-pressure digestion vessel	Frame-style high-pressure digestion vessel: PEEK for outer vessel, TFM for inner vessel. Maximum working pressure: 6.4 MPa (±0.05 MPa), maximum pressure ≥ 15 MPa; maximum working temperature: 255°C; maximum temperature ≥ 300°C.
Working mode	① Able to create, edit and save more than 256 kinds of digestion methods; ② Maximum 10 digestion steps setup for every method; ③ Intelligent heating rate control mode and thermostat control mode; ④ Automatic cooling mode is built in with the cooling stop condition is adjustable.
Multiple safety precautions	More than 10 active and passive security functions, including: ① Industrial-grade cylindrical furnace chamber, and overhead-type explosion-proof door with microwave leakage alarm function; ② Real-time monitor of temperature and pressure for every digestion sample; ③ Over-pressure alarming limit; ④ Elastic pressure-controlling protection device; ⑤ Overheat and over-current protection; ⑥ Abnormal noise detection protection; ⑦ System failure self-check and warning; ⑧ High-temperature and high-pressure resistant framework for digestion vessel; ⑨ Non-destructive pressure-releasing groove; ⑩ Three powerful centrifugal exhaust fans (exhaust capacity, 6 m3/min) to protect operator from harmful gas.
Intelligent control	Visual and convenient to use with full touch screen; Display working parameters in real time (temperature, pressure curve and etc.); Chinese / English language selection; Large OK button avoids misoperation.
Power supply	220 V / 110 V, 50/60 Hz; Power: 2800 W.
Size	665 x 650 x 570 mm; Net weight: 60 Kg.