

# Multiwave 3000

## Microwave Sample Preparation System

### Multiwave 3000 Microwave Oven

Power supply:	230 V AC 50 Hz or 230 V AC 60 Hz
Power consumption:	3680 VA
Microwave output power:	1400 W max., delivered from 2 magnetrons
Microwave power control:	Unpulsed control mode over entire power range Adjustable in 1W increments
Magnetron frequency:	2455 MHz
Weight:	74 kg
Dimensions (WxDxH):	60 x 72 x 74 cm (23.6 x 28.3 x 29 inch)
Cavity dimensions (WxDxH):	45 x 42 x 35 cm (17.7 x 16.5 x 13.8 inch)
Cavity volume:	66 Liter
Cavity material:	Stainless steel, with multilayer fluoropolymer coating
Exhaust unit capacity:	190 m <sup>3</sup> /h max., adjustable in 4 steps
Rotor speed:	3 rpm
System control:	Microprocessor (Motorola 68xxx-series) Library of tested methods (freely extendable by the user) Memory for up to 200 methods Storage of last 10 hours of operation
Display:	Illuminated LCD, 240 x 128 pixel (40 characters x 16 lines)
Input elements:	Spillproof keypad, 8 keys (Start, Stop, Esc, 5 function keys)
External keyboard:	AT 5-pin DIN 41524 connector
Serial interface:	RS232 C, 9-pin SUB-D (2x)
Parallel interface:	Centronics 25-pin SUB-D
Calibrator & auxiliary interface:	15-pin SUB-D (2x)
Ambient temperature:	15 to 35 °C
Relative humidity max.:	80%, non condensing
Noise level:	66 dBA, under optimal installation conditions, cooling at fan step 3 (120 ° phase angle), measured at the front.
Overvoltage class:	II
Pollution degree:	2
Protection class:	I, according to VDE 0106
Protection degree:	IP 20, according to IEC 144
EMC ambient conditions:	Laboratory use
Complies with:	Electromagnetic compatibility (89/336/EEC) Equipment for laboratory use EN 61326 + A1 + A2: 2002 RF emissions EN 50081-1: 1993 RF susceptibility EN 50082-1: 1997 ISM equipment FCC part 18 Low Voltage Directive (73/23/EEC) Safety EN61010-1: 2001

## Options

IR temp. sensor accessory:	20 to 400 °C measuring range Can be installed in the field by a service engineer
Magnetic stirrer accessory:	Stirrer drive magnets underneath oven cavity Software-adjustable speed (0 / 200 / 400 / 600 rpm) Can be installed in the field by a service engineer
p-T sensor accessory:	For one reference vessel in 16-position rotors Temperature measuring range: 0 to 300 °C Uncertainty up to 200 °C: ± 2 °C, up to 300 °C: ± 3 °C Pressure measuring range: 0 to 86 bar Uncertainty: ± 0.2 bar

## Rotor 8XQ80

Number of vessels:	8
Vessel design:	Quartz reaction vessel Seal holder with safety disk and relief valve Vessel jacket consisting of protective casing and protective cap
Volume:	80 mL
Controlled operation pressure:	80 bar (1160 psi)
Pressure max.:	120 bar (1740 psi)
Temperature max.:	300 °C for 2 hours, at 80 bar
Overpressure protection:	Metal safety disk
Reaction control:	Simultaneous pressure sensor for all vessels
Dimensions (D x H):	39 x 32 cm
Weight:	14.8 kg

## Rotor 8XF100

Number of vessels:	8
Vessel design:	Ceramic pressure jacket with PTFE-TFM liner Seal holder with safety disk and relief valve
Volume:	100 mL
Controlled operation pressure:	60 bar (870 psi)
Pressure max.:	120 bar (1740 psi)
Temperature max.:	260 °C for 2 hours, at 60 bar
Overpressure protection:	Metal safety disk
Reaction control:	Simultaneous pressure sensor for all vessels
Dimensions (D x H):	39 x 32 cm
Weight:	14.8 kg

## Rotor 16HF100

Number of vessels:	16
Vessel design:	Ceramic pressure jacket with PFA-TFM liner Screw cap with safety disk and relief valve
Volume:	100 mL
Controlled operation pressure:	40 bar (580 psi)
Pressure max.:	70 bar (1000 psi)
Temperature max.:	240 °C for 2 hours, at 40 bar
Overpressure protection:	Metal safety disk
Reaction control:	Optional reference vessel w. pressure and temperature sensor
Dimensions (D x H):	40 x 33 cm
Weight:	13.8 kg

## Rotor 16MF100

Number of vessels:	16
Vessel design:	PEEK pressure jacket with PFA liner Screw cap with safety disk and release valve
Volume:	100 mL
Controlled operation pressure:	20 bar (290 psi)
Pressure max.:	70 bar (1000 psi)
Temperature max.:	200 °C for 30 minutes, at 20 bar
Overpressure protection:	Metal safety disk
Reaction control:	Optional reference vessel with pressure and temperature sensor
Dimensions (D x H):	40 x 33 cm
Weight:	10.5 kg

## Rotor 1DRY

Sample weight:	10 mg to 1 kg
Chamber design:	Slightly self-heating glass tube to avoid condensation Lid with 6 sintered glass filters for filtration of air passing through the chamber Porcelain desiccator plate with 4 mm perforation
Volume:	4.3 L
Max. temperature:	120 °C
Dimensions (D x H):	28 x 17 cm
Weight:	4.4 kg

## Rotor 8EVAP

Number of vessels:	8
Vessel design:	PEEK or ceramic pressure jacket with PTFE-TFM liner Screw cap with syringe filter (PTFE) for air inlet and connection hose for gas outlet
Volume:	100 mL
Pore size of syringe filter:	0.2 µm
Dimensions (D x H):	40 x 22 cm
Weight:	4.8 kg (without vessels)

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