ETHOS X
for Environmental Applications
TECHNICAL SPECIFICATIONS

MILESTONE
HELPING CHEMISTS

| HARDWARE

› Microwave cavity: 18/8 stainless steel housing with multi-layer PTFE coating
› Inlet/Outlet ports: upper fl ange 36 mm ID, lower 19 mm ID, plus additional ports on the side walls
› Chassis: protected against acids and solvents with polymer coating on both inner and outer surfaces
› Door construction: completely made of 18/8 stainless steel
› Door safety: self-resealing pressure responsive door. Automatic door locking system
› Safety features: four independent door safety interlocks to prevent microwave emission in case of improper door closure or misalignment
› Exhaust system: built-in, located on the back of the microwave cavity and separated from the electronics to prevent corrosion. Max Flow rate 180 m^3/h
› Video camera: optional with Terminal 660, with PTFE-Teflon foil protection
› Magnetic stirring: software-controlled in-vessel magnetic stirring of solution up to a speed of 3400 rpm (optional)
› Microwave emission: dual magnetron system with rotating diffuser for homogeneous microwave distribution in the cavity. Exclusive magnetron protection from reflected microwave power
› Magnetron frequency: 2450 MHz
› Magnetron output: 2 x 950 Watt
› Magnetron control: continuous and PID-controlled microwave emission at all power levels
› Internal cavity illumination: 6 high-intensity LED
› Power supply: 220-240 V~ / 50 or 60Hz
› Power supply safety device: 2 circuit breaker for equipment thermal, snap-in type
› Emission and safety norms: UL 61010-1:2012/R:2016-04, UL 61010-2-010:2015-01, CAN/CSA C22.2 No.61010-1:2012/U2:2016-04, CAN/CSA-C22.2 No.61010-2-010:2015-01
› Microwave cavity volume: 70,5 L
› Microwave cavity dimensions: 430 (w) x 400 (d) x 410 (h) mm

| USER INTERFACE 660

› Control terminal touch-screen 6,5" TFT display, 640x480 VGA resolution with 262K colors, 5 USB ports, 1 RS232 port, 1 LAN port, 2 Video ports. Balance, Printer, mouse and keyboard connections
› Operating software: icon-driven multi-language software (Chinese, English, French, German, Italian, Japanese, Polish, Portuguese, Russian, Spanish, and Turkish), software with multilevel access allowing the user/administrator the edit, save and run a virtually unlimited number of methods
› Software features: built-in application library, including all parameters (sample amount, reagents type and volume, time, power, temperature, pressure)
› Rotor diagram visualizes the temperature of individual vessels during the extraction process

| USER INTERFACE 480

› Control terminal touch-screen 4,3" TFT display, 480x272 VGA resolution with 16M colors
› Operating software: icon-driven multi-language software (Chinese, English, French, German, Italian, Japanese, Polish, Portuguese, Russian, Spanish, and Turkish), software with multilevel access allowing the user/administrator the edit, save and run a virtually unlimited number of methods
› Software features: built-in application library, including all parameters (sample amount, reagents type and volume, time, power, temperature, pressure)

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H E L P I N G
C H E M I S T S

REACTION SENSORS

› **T2**: contact-less temperature monitor and control via infrared sensor up to 300°C in all positions

PRESSURE VESSELS

› Environmental extraction setup: 24 positions rotor. Weflon vessels (PTFE charged with graphite) with a total volume of 145 mL. Extraction is performed in 100 mL disposable glass vials. The glass vials allow extraction of large sample amount up to 30 g
› Flexibility. Upgradable to:
  – Microwave acid digestion for elemental analysis
  – Solvent and/ or acid evaporation
  – Total fat determination in food samples
  – Microwave synthesis

OTHER INFORMATION

› Dimensions: 540 (w) x 640 (d) x 690 (h) mm
› Weight: 84 Kg
› Power supply: 230 V, 50-60 Hz
› Noise level: 75dB

STANDARD METHOD COMPLIANCE

› **US EPA 3546**: Microwave extraction of semi-volatile organic compounds, organophosphorus pesticides, organochlorine pesticides, chlorinated herbicides, phenoxyacid herbicides, substituted phenols, PCBs, and PCDDs/ PCDFs, which may then be analyzed by a variety of chromatographic procedures
› **ASTM D-5765**: Standard Practice for solvent extraction of total petroleum hydrocarbons from soils and sediments using closed vessel microwave heating
› **ASTM D-6010**: Standard practice for closed vessel microwave solvent extraction of organic compounds from solid matrices