Technical Specifications

NETZSCH

STA 449 *F3 Jupiter*® – *SKIMMER* Coupling

STA 449 *F3 Jupiter*® Specifications	
Temperature range	RT to 2000°C
Furnaces and double hoist positions (left and right)	*SKIMMER* furnace in left position: ▪ SiC: RT to 1450°C with *SKIMMER* orifice made of alumina ▪ Graphite: RT to 1950°C with *SKIMMER* orifice made of glassy carbon Right position: For an exchangeable 2nd furnace (temperature range -150°C to 1650°C)
Weighing range	35 g
Sensor types	Quickly exchangeable sensors for different measurement methods: ▪ TGA ▪ TGA-DTA ▪ TGA-DSC
Gas flow measurement	3 mass flow controllers (MFC), optional 4 MFCs
Vacuum-tight	10^{-4} mbar (10^{-2} Pa)
Oxygen Trap System *OTS*™	Optional; O_2 partial pressure < 1ppm
Crucibles in various dimensions	Pt, Al_2O_3, graphite, Au, SiO_2, Cu, W, Ag, BN, ZrO_2, Pt with Al_2O_3 liner, Al incl. with lids pierced (50 µm hole), etc.; more on request
QMS Specifications	
Mass range	1 u ... 512 u
Mass filter	Quadrupole
Ion source	Electron impact, energy up to 125 eV, adjustable in steps of 1 eV for "soft" and "hard" ionization
Cathodes/filaments	Iridium cathodes with yttrium
Detector	Faraday; SEM
Operating pressure	< 10^{-5} mbar (Faraday); < $5x10^{-6}$ mbar (SEM)
Detection limit	<100 ppb (gas-dependent, measured with toluene)
Vacuum	$5x10^{-6}$ mbar
Measuring modes/ scan rates	▪ Analog scan: 10 ms/u …60 s/u ▪ Scan bargraph: 2 ms/u …60 s/u ▪ Multi Ion Detection (MID): 0.5 ms/u ... 60 s/u; up to 64 selectable mass numbers and mass ranges
***SKIMMER* Coupling Specifications**	
Arrangement	▪ Vertical ▪ Completely heated
1st pressure reduction step	**Orifice**
Materials	▪ Polycrystalline alumina (1450°C) ▪ Glassy carbon (1950°C)
Vacuum system	Pump system and pressure control for constant sensitivity in MS
2nd pressure reduction step	***SKIMMER* cone**
Materials	▪ Polycrystalline alumina (1450°C) ▪ Glassy carbon (1950°C)