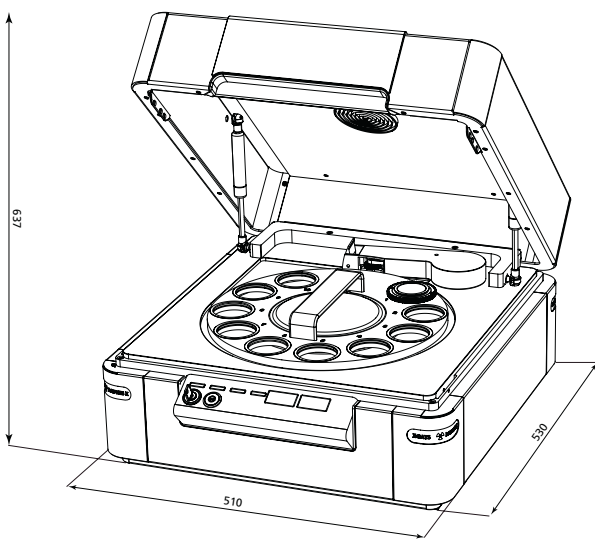**Malvern Panalytical**

EPSILON 4
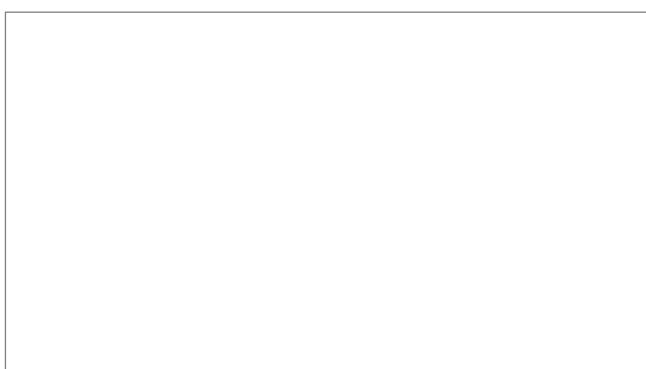## TECHNICAL SPECIFICATIONS

Energy dispersive X-ray fluorescence spectrometer for the elemental analysis range from F to Am and the concentration range from ppm to 100 %.

Sample handling

Types of samples	Powders (loose and pressed), fused beads, metals, liquids, films, large samples
Sample size	Solids 27 - 51.5 mm diameter Height 10 cm maximum Typically 10 mL of liquid or powder in a sample cup LSM: Large (un-cupped) sample mode Maximum 10 x 20 x 10 (H x W x D) cm
Sample weight	Maximum 200 g
Sample changer	10 position, removable tray
Spinner	Included

	Basic configuration	Upgrades	Special
X-ray tube			
Tube settings	Software controlled: max 50 kV, max 2 mA, max 10 W	Software controlled: max 50 kV, max 3 mA, max 15 W	Software controlled: max 50 kV, max 3 mA, max 15 W
Types	Metal-ceramic, side-window		
Anode material	Rh and Ag, specials on request		
Tube filters	Six, software selectable (Cu 300 µm, Cu 500 µm, Al 50 µm, Al 200 µm, Ti 7 µm, Ag 100 µm)		
Window	50 µm (Be)		
Detector			
Types	High-resolution Si drift detector SDD10	High-resolution Si drift detector SDD30	High-resolution Si drift detector SDDUltra
Windows	8 µm (Be)	8 µm (Be)	Ultra-thin window
Elemental range	F - Am	F - Am	C - Am
Resolution	< 145 eV @ 5.9 keV cps Typically 135 eV @ 5.9 keV cps		
Max count rate input	1500 kcps @ 50% dead time		
Electrical			
HT generator	Max 10 W	Max 15 W	Max 15 W
Main supply voltage	90 - 264 V		
Frequency	47 - 63 Hz		
Power consumption	250 VA		

Helium purge

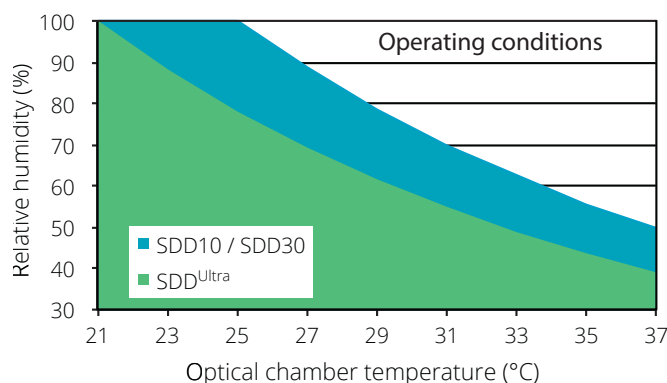|	
Improves intensities of low atomic number elements such as C, N, O, F, Na, Mg and Al	
Inlet pressure	0.8 bar
Gas purity	99.996 %
Gas consumption	0.5 L/min
Reduction valve for gas bottle and 8 meters of tube included	

Data processing

Built-in 4096 multi-channel analyser (MCA)

Computer

32- or 64-bit based notebook or desktop PC with DVD-ROM and a minimum of 1 USB port.
Minimum of 2 GB RAM and 10 GB available hard disk space

Software

- Epsilon software for qualitative and quantitative analysis. Optional software modules include: Omnian (standardless), Oil-Trace, Stratos, FingerPrint and Enhanced Data Security.
- Interactive, operation under Windows 7 and Windows 8.1 Mouse or touch-screen operation
- Remote support (online and phone)

Installation

Dimensions	270 x 530 x 510 mm (H x W x D)
Weight	47 kg
Operating ambient temperature	5 °C – 35 °C
Operating humidity	20 % - 80 % non-condensing

Safety standards

Protection	IEC1010/EN61010 CSA c22.2 No. 1010 IEC 529 IP20 EMC Directive 2004/108/EC Machine Directive 2006/42/EC G.O.S.
Radiation	Vollschutz according to Röntgenverordnung1987 in the version published 30 April 2003

Quality

Developed, manufactured and supported according to ISO9001

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