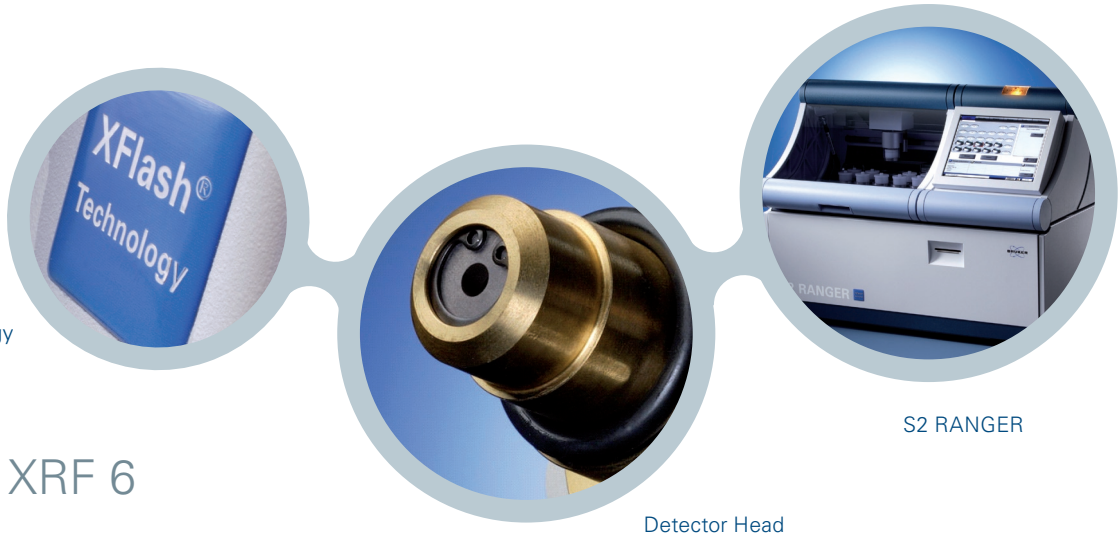

XFlash Technology

Detector Head

S2 RANGER

Product Sheet XRF 6

XFlash LE®

For Enhanced Light Element Detection with the S2 RANGER

The brand new XFlash LE detector features enhanced light element analysis with the energy-dispersive X-ray fluorescence spectrometer S2 RANGER. With the XFlash LE detector installed the S2 RANGER achieves more than eight times the sensitivity for sodium and more than 4 times for magnesium compared to standard silicon drift detectors (SDD). Thanks to the high transmission window even X-ray fluorescence lines from elements such as carbon, oxygen and fluorine can be recorded.

Due to the SDD technology the XFlash LE can exploit the high count rates of the 50 W direct excitation technology of the S2 RANGER maintaining best energy resolution of less than 129 eV at count rate levels of more than 100 000 cps. This performance facilitates to achieve accurate results in shortest possible measurement times. The counting statistical error is minimized for more precise results.

This increase in performance of the S2 RANGER extends the application range of EDXRF further into food, minerals and mining, and cement.

Fig. 1: XFlash LE detector.

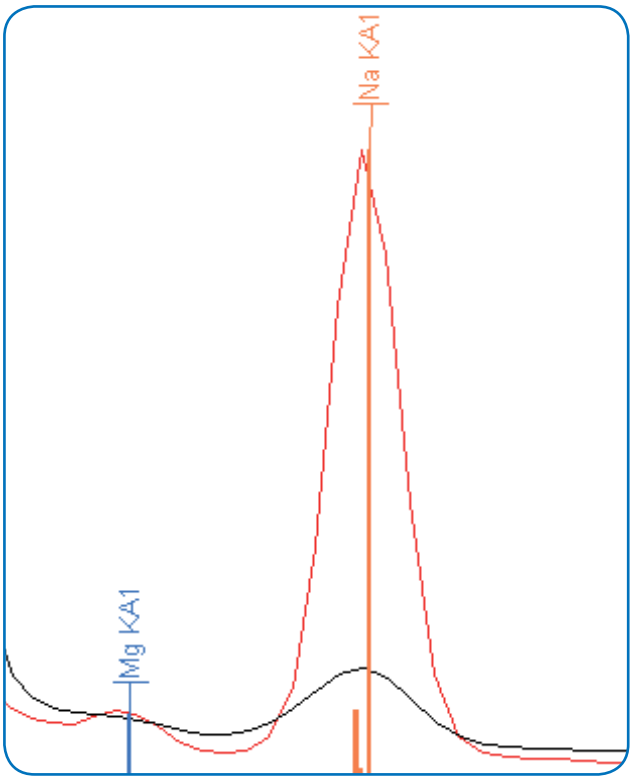

Fig. 2: Enhanced spectrum of Na Kα1 of the XFlash LE (red) compared to a standard SDD (black).

The enhancement of the analytical performance for light elements is demonstrated in picture 2 comparing two spectra. A sodium feldspar sample was measured with a standard silicon drift detector and the XFlash LE detector applying the same excitation conditions.

For the standard SDD detector the magnesium cannot be detected at low concentration, only a small signal is observed for sodium.

The spectrum measured with the XFlash LE SDD is completely different – the sodium peak is more than eight times higher compared to the standard SDD and the magnesium signal is clearly resolved from the background.

The detection of lower magnesium levels beside higher sodium concentrations and the accurate analysis of sodium are now possible with the S2 RANGER and the XFlash LE unmatched light element performance.

Specifications	
Detector type	Silicon Drift Detector
Window	High transmission window
Active area	10 mm^2
Resolution	< 129 eV for Mn Kα1 at 100 000 cps
Energy Range	0.27 keV – 36 keV C Kα – Ba Kα
Cooling	Electrical Peltier cooling to –25 °C, maintenance-free
Maximum impulse density	230 000 cps
Signal shaping	0.67 µs Gauss approximation
Compatibility	S2 RANGER V 4.0 and higher

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