



Avantes has some great advantages in LIBS applications:

- Multitrack in combination with resolution
- Timing and triggering
- Extensive knowledge on LIBS

**Laser Induced Breakdown Spectroscopy (LIBS)** is a rapid chemical analysis technology that uses a short laser pulse to create a micro-plasma on the sample surface. This analytical technique offers many compelling advantages compared to other elemental analysis techniques. These include:

- A sample preparation-free measurement experience
- Extremely fast measurement time, usually a few seconds, for a single spot analysis
- Broad elemental coverage, including lighter elements, such as H, Be, Li, C, N, O, Na, and Mg
- Versatile sampling protocols that include fast raster of the sample surface and depth profiling
- Thin-sample analysis without the worry of the substrate interference

A typical detection limit of LIBS for heavy metallic elements is in the low-PPM range. LIBS is applicable to a wide range of sample matrices that include metals, semiconductors, glasses, biological tissues, insulators, plastics, soils, plants, soils, thin-paint coating, and electronic materials.

#### Application LIBS configurations

Spectrometers AvaSpec-ULS2048/4096CL-EVO (Starline) - CMOS—2048/4096 pixels

AvaSpec-ULS2048XL-EVO(Sensline) - back thinned CCD—2048 pixels

#### Gratings Range & Resolution

Grating UE (2400 lines/mm) , DUV, 190-309 nm, 0.09 nm (FWHM)

Grating UE (2400 lines/mm), DUV, 307-410 nm, 0.07 nm (FWHM)

Grating VE (2400 lines/mm), OSF-385, 408-494 nm, 0.06 nm (FWHM)

Grating VD (1800 lines/mm), OSF-475, 493-616 nm, 0.09 nm (FWHM)

Grating VD (1800 lines/mm), OSF-550, 615-715 nm, 0.07 nm (FWHM)

Grating VC (1200 lines/mm), OSF-600, 714-902 nm, 0.14 nm (FWHM)

Fiber Optics Multi-furcated fibers optic splitters—see Avantes catalog

Accessories IC-DB26-EXTRIG-BNC-2—external triggering cable